The Action-Action Gap

The Impact of Social Environments on Responsible Consumption Behavior

by

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Abstract

Title:	The Action-Action Gap - The Impact of Social Environments on Responsible Consumption Behavior
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Keywords:	Responsible Consumption Behavior, Situational Behavior, Environmental Influences, Value-Action Gap, Action-Action Gap
Thesis Purpose:	The purpose of this study is to generate a deeper understanding of the influence of social environments on individuals' responsible consumption behavior.
Methodology:	Based on between-group and within-group comparisons of data obtained from an online survey, we conducted one-way and factorial ANOVA tests.
Theoretical Perspective:	This study contributes to a better understanding of the variability in responsible consumption behaviors. It advances and builds on the concepts of responsible consumption, situational consumption, and the value-action gap by linking these streams of knowledge to each other.
Empirical Data:	Following a quantitative research design, this study utilized an online survey to investigate the effect of social environments and age on responsible consumption. 410 complete datasets were gathered through non-probability sampling.
Findings:	The present research is unique in the way that it contributes to the existing literature by combining several strings of research that have not been studied in coherence like this before. It reveals that social environments have a large influence on responsible consumption behavior and that age is a significant moderating variable. While people aged between 18 and 34 are less likely to be influenced by one specific social environment, individuals aged 35+ are more likely to exercise responsible behavior when with their families.
Practical Implications:	For both, marketers and policymakers, the findings of this study provide valuable insight for their promotion strategies. Marketers can optimize their product offerings and tailor their marketing attempt while policymakers can utilize the findings to more efficiently trigger responsible consumption practices in general.

Acknowledgments

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1 Introduction

This chapter introduces the responsible consumer, the value-action gap, and situational consumption, which combined formed the starting point for the identification of the concept we term the *action-action gap*. To begin with, the chapter highlights the background of the research environment. Followed by that it focusses on the problematization of past research, it identifies the purpose of this study and accordingly translates this into the research question. Lastly, the introduction chapter clarifies the intended contributions of this research and provides an explanation and visualization of the structure of the thesis.

1.1 Background

Over the past two decades, the global increase of populations and the rising middle class have developed economic opportunities and growth which have been a driver for capitalism (Petras, Veltmeyer & Márquez, 2016; Statista, 2019). Capitalism and economic growth are dependent on the production of consumption levels that always represent more than what consumers need (Zwick, Bonsu & Darmody, 2008). Do I actually need this new *Zara* sweater? No, but I want it. This excessive consumption is the number one reason for the exploitation of the natural resources of planet earth (Chai, Bradley, Lo & Reser, 2015). Data from the European Commission (2019) support this argument, stating that consumption has been growing with more speed than the population in the last two decades. At present, businesses and individuals are exploiting the earth's stock of renewable and non-renewable resources at a rate of three times as much as planet earth can provide us (EEA, 2016). It is now clear that to save the ecosystems, our 21st-century societies need to bring back the consumption rate to fit the capacity of planet earth to regenerate the resources themselves. Hence, changes in consumer behavior are not a choice anymore they are a necessity (Deloitte, 2012).

According to research, sustainable awareness has risen among consumers in the past decades (i.e. Berkowitz & Lutterman, 1968; De Brito, Carbone & Blanquart, 2008; Roberts, 2020). Several researchers thus hold that a growing number of consumers indicate their willingness for more sustainable consumption, which is often referred to as the *sustainable consumer*, the *so-*

cially conscious consumer, the *ethical consumer*, the *green consumer*, or the *altruistic consumer* (Andorfer, 2013; Deloitte, 2012; Giesler & Veresiu, 2014; Nielsen, 2019; Niinimäki, 2010; Quoquab & Mohammad, 2016). In this research, we refer to the responsible consumer, to describe a consumer whose consumption choices are guided by the belief or perception to have a more positive impact on the ecosystem and who accordingly supports businesses that attempt to have a positive influence on people and planet (Andorfer, 2013; Roberts, 2020).

The growing awareness of and concern about sustainability and environmental issues have changed not only consumer behavior in the way that they demand more environmentally friendly options, but also organizations are accordingly joining the conversation and have started to incorporate sustainability issues in their business operations (Nielsen, 2019). Companies now incorporate responsible behavior practices and explicitly market these in various ways. Sustainability reports gained prominence in many – especially big – companies to demonstrate their stake in doing good (Kolk, 2003); the field of corporate responsibility persistently generates buzz (McPherson, 2020); and progressively more eco-focused start-ups successfully enter the market with sustainability being their major selling point (Delventhal, 2020). Responsible consumption and business practices, therefore, became an integral part of business and marketing strategies.

Despite these promising studies on the attitude and willingness of consumers to adopt a responsible consumption lifestyle, consumer behavior often does not mirror this (Babutsidze & Chai, 2018; Barr, 2006). According to research on food waste by Boston Consulting Group (2018), the amount of yearly food wasted is expected to grow from 1.6 to 2.1 billion tons by 2030. Similarly, plastic pollution is also expected to increase by 40% over the next decade (Selby, 2020). Even though awareness of sustainable consumption has risen in recent years, there is a large gap between consumers' attitudes and their actual behavior. Today's consumers always want more: more products, newer products, cheaper products, but on the other hand, the hypocrite consumer also claims to be concerned about the impact of their consumption behaviors. The term associated with this space that occurs when a consumer's values or attitudes do not correlate with their behavior is referred to as the *value-action gap* (i.e. Barr, 2006; Blake, 1999; Chai et al., 2015). For this study, we define the value-action gap by the imbalance between values individuals claim to uphold regarding certain concerns and the decisions and behaviors they de facto exercise. Said differently, individuals often articulate interests in responsible actions but rarely act on these accordingly.

Besides the environmental impact of the value-action gap, the implications for marketers are the invariability and unpredictability of consumer behavior (Babutsidze & Chai, 2018; Cova, 1997). How do you market your products when people constantly state one thing but act out something else? As self-reported responsible consumption attitudes and values do not correspond with the actual consumers' behavior, marketers are limited in developing accurate strategies (Babutsidze & Chai, 2018; Chai et al., 2015; Cova, 1997). Given this growing inability of marketers and researchers to sufficiently understand and explain the variation in buying behavior, researchers began to study situational influences on behavior as one possible way of better understanding customers inconsistent behavior (Belk, 1975; Horgan et al., 2019; Kuhe & Bisu, 2019; Liu, Liu & Jiang, 2019). Research in this field uncovers that various situational influences affect consumer behavior. These might be simple things like the price of a product, the season of the year, or people's moods on that specific day (Hornik, 1982; Kuhe & Bisu, 2019). Within the literature, researchers declared reference groups as a major influence on situational consumption, meaning that social groups are an important point of comparison for a consumer (Escalas & Bettman, 2003).

1.2 Research Problem – The Action-Action Gap

Within past research, the standard way of thinking has it that the larger part of consumers aims at responsible consumption in the daily course of life. While the responsible consumer emerged as an enduring field of literature during the past decades, research on the value-action gap uncovers the hypocritical aspects of the responsibility trend. On a different notion, situational consumption discusses all different aspects of how certain circumstances influence consumer decisions. While these contributions are certainly valuable, they hang in literature individually and we believe that research up to now neglects the link of these research fields. Up to now, most research differentiates between responsible consumption based on the value-action gap and consumption behaviors influenced by situational variables. In our opinion, these different streams of literature need to be approached cohesively. The value-action gap serves as a starting point to discover another gap that, for us, is clearly visible in the current market.

We observed that there is a lack of research on responsible behavior in different situations. For us it is not enough to study how people claim to value one thing but then act differently. We

find it crucial to note and investigate how an individual consumer might apply different behaviors in different situations and different roles he or she takes on in these situations. In other words, we are interested in how far people are more likely to uphold their claimed values in some environments than in others. In contrast to the value-action gap, we term this phenomenon of acting one way in one situation and differently in another as the *action-action gap*.

By identifying consumer behavior at an individual level in the different environments they operate in, we aim to shed more light on the confusion in consumption. Therefore, we want to look deeper into the area of how and when single individuals implement more or less responsible consumption behavior. The assumption we aim to verify is that individuals' responsible consumption behavior is influenced by the social environments they operate in.

1.3 Purpose of the Study

Research up to now looks at consumer behavior on a general level when researching the value-action gap. This means that responsible consumer behavior is considered to be the same at all times regardless of situational variables. The factors responsible for the value-action gap with respect to consumers' behavior at a general level have been well clarified, however, as mentioned in the research problematization, effects of the social environments on an individual's responsible consumption behavior need to be tested.

The purpose of this study is to generate a deeper understanding of the influence of social environments on individuals' responsible consumption behavior.

To achieve this, different steps need to be considered in this research. First of all, it is important to identify the components of the social environment with the most significance on consumer behavior. Secondly, the relationship between the situational variables and responsible consumption behavior has to be identified. In a final step, it is then possible to investigate the effects of each social environments on an individual's responsible consumption behavior. In addition, we want to find out in how far age influences the relationship between social environments and responsible behavior.

If this process is successful, research on the influence of the social environments on an individual's responsible consumption behavior allows marketers to develop a deeper understanding of

the underlying factors responsible for the inconsistency in individuals' behavior in different social situations. Consequentially, it illuminates and explains the phenomenon of the *action-action gap*.

To accomplish the objective of the study, this research aims to quantitatively examine how individual responsible consumer behavior and behavior is affected by the social environment. Consequently, the research question of our research asks: "*How do different social environments influence individuals' responsible consumption behavior*?" Further, age serves as a moderating variable.

1.4 Contributions to the Research Field

This study aims to arrive at a conclusion regarding how different social environments influence individuals' responsible consumption behavior and to contribute to the existing body of literature on the value-action gap and situational consumption by combining these two fields within responsible consumption. The theoretical contribution made, is the explanation of the *action-action gap*, which serves as an extension of research on responsible consumer behavior and situational consumption. Within previous research, a link between responsible consumption, the value-action gap, and situational consumption is not drawn yet. Therefore, this research provides a clarification for the value-action gap with respect to the influences of the situational variables of the social environments on individual responsible consumption behavior.

From a managerial perspective, this research enables segmenting different social environments and their influence on individuals' responsible consumption behavior into manageable groups. Consequentially, strategies can be developed accordingly to the social environments' individuals operate in. Thus, this research also has managerial implications that help marketers and policymakers to leverage a consumer-centric mindset when marketing sustainable product or behavior campaigns. For example, businesses and governments can use this information to decide if and how to approach the same person in different ways when being in different social environments.

1.5 Structure of the Thesis

The research is divided into seven chapters. The first chapter, the introduction chapter, serves as an explanation for the background of the phenomena investigated alongside with clarifying the importance and the intended contribution of this study. Chapter two, the literature review, identifies the existing body of literature. Three prominent streams of literature are identified as important for this research; the field of the responsible consumer, the value-action gap, and situational consumption. The chapter concludes with a short summary in the form of a critical reflection of existing literature. The third chapter gives a quick overview of the theoretical framework, developing and explaining the variables used in this research and introducing the hypotheses that are tested in this thesis. Chapter four then portrays the methodology of the study by explaining the research approach, it's design, the data collecting methods, and research quality criteria. Finally, the chapter points out major limitations related to methodological issues. Chapter five is the analysis chapter. It covers the data processing and looks at the statistical output of our survey. It also tests if the statistical hypotheses hold. Building on this, chapter six provides a critical reflection on the results through a discussion of the key findings concerning previous literature. Finally, chapter seven, the conclusion, provides a synthesis of the main findings related to the research's objective and answers the research question of how different social environments affect individuals' responsible consumption behavior. Besides, this chapter provides a summary of the theoretical and practical contributions to the existing field of knowledge, it gives suggestions for future research, and summarizes the limitations of the study. A visualization of the thesis structure is presented in Figure 1.1.

Chapter 1: Introduction
Chapter 2: Literature Review
Chapter 3: Theoretical Framework
Chapter 4: Methodology
Chapter 5: Analysis
Chapter 6: Discussion and Key Findings
Chapter 7: Conclusion
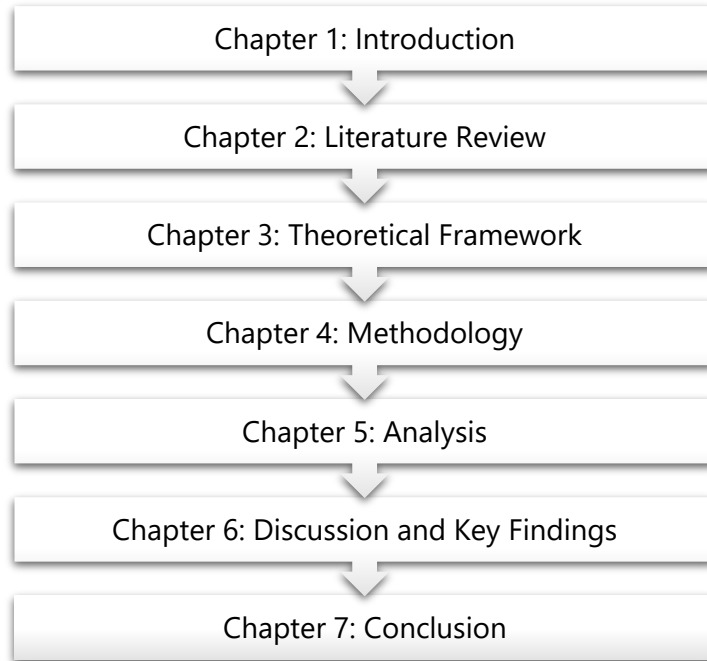
Figure 1.1: Thesis Structure

2 Literature Review

The following chapter presents information that provides a context for the overall topic of this paper. The literature review is divided into three streams of literature that are relevant to understand and discuss the impact of social environments on responsible consumption behavior. Namely, these are the responsible consumer, the value-action gap, and situational consumption.

2.1 Responsible Consumer

In the past two decades, academics have implied a shift from corporate social responsibility to individual social responsibility. Environmental issues are no longer only in the hands of corporations and governments, but rather in the hands of the responsible consumer directly (Giesler & Veresiu, 2014; Lockie, Lyons, Lawrence & Mummery, 2002; Vermeir & Verbeke, 2006; Webster, 1975). Some frequently asked questions in academic research are: *Who is the responsible consumer?* and *Why is a consumer responsible?* (i.e. Berkowitz & Lutterman, 1968; Giesler & Veresiu, 2014; Quoquab & Mohammad, 2016).

Even though the responsible consumer is continuously investigated inside academia for the past 40 years, there are substantial inconsistencies among academics with regards to suitable definitions, explanations, contexts, and classifications. The *sustainable consumer*, *socially conscious consumer*, *ethical consumer*, *green consumer*, and the *altruistic consumer*, are examples of the alternative terms used by researchers and practitioners to describe the responsible consumer (Andorfer, 2013). For the consistency of this research, we refer to the responsible consumer as a consumer whose consumption choices are guided by the belief or perception to have a more positive impact on the ecosystem and who, therefore, supports businesses that attempt to have a positive influence on people and planet (Roberts, 2020).

Research indicates that the responsible consumer is future-oriented and concerned about environmental issues (i.e. Anderson & Cunningham, 1972; Roberts, 2020; Webster, 1975). In our study, we signify environmental concerns as the degree to which a person is concerned about the consequence and treats of their consumption practices on global ecosystems concerning health, nature, and opportunities for future generations and the less fortunate (Roberts, 2020).

In light of the discussion on what makes a consumer responsible literature presents a variety of answers. Quoquab and Mohammad (2016) synthesize the practices of responsible consumption as 1) a conscious attempt to meet basic needs, 2) moderation in expenditure, 3) to focus on quality life rather than materialism, 4) care for the future generation, and 5) care for environmental consequences. Considering future generations and environmental consequences, Babutsidze and Chai (2018), Whitemarsh, Seyfang, and O'Neill (2011) and Frederik, Stenne, and Hobman (2015) clarify the importance of the choice of transportation in practicing responsible consumption. Another critical area of responsible consumption behavior outlined within the literature is eating habits. A great part of past research on responsible consumption involves the degree of meat consumed along with the choice for eco-friendly or fair-trade products (Andorfer, 2013; Horgan et al., 2019; Lockie et al., 2002; Vermeir & Verbeke, 2006). Eco-friendly products are produced with the long-term objective to improve the working and living conditions of producers and workers in developing countries, while alongside reducing the environmental impact of the production processes involved (Andorfer, 2013). Building on this, Webster (1975), Fiorillo and Senatore (2020), and Nainggolan et al. (2019) consider waste prevention, recycling, and limiting the disposal of products and goods as pro-environmental behavior as it minimizes the negative impact on the environment. Linking back to the third practice identified by Quoquab and Mohammad (2016), to focus on quality life rather than materialism, research on sustainable clothing consumption practices strongly supports the focus on quality rather than materialism (De Brito, Carbone & Blanquart, 2008; Niinimäki, 2010).

In the literature, contrasting views and timeframes are recognized with regards to findings on the characteristics of the responsible consumer. Berkowitz & Lutterman (1968) describe the traditional responsible consumer as a personality that tends to be conventional and is greatly influenced by the education of his social surroundings and culture. The higher the education level of the social surroundings of the individual and the individual's own education level, the higher the social responsibility appears to be. Alongside this, the research indicates that the responsible consumer prefers inner-direction over outer-direction which means that being socially responsible is considered more important than having a high social status or being important in the eyes of society. Studies by Anderson & Cunningham (1972) and Webster (1975) confirm these findings. Both studies highlight that high social responsibility tends to correlate to a high socio-economic status. Annual income is identified as a strong discriminator and does have a significant impact on social responsibility. Moreover, age, education, and the occupation

of the household's head prove to be highly sensitive influences of an individual's social responsibility. Hence, early literature holds that the image of the responsible consumer is that of a middle-aged person, with high professional accomplishments and tall socioeconomic status accompanied by a more conservative lifestyle while being less status conscious.

Research after 1996 challenges this perspective and displays contradicting views. In his research on green consumption in the 1990s, Roberts (1996) points out a negative correlation between socioeconomic status and income and responsible consumption. This indicates that environmental concerns reached the point where consumers from the lower socio-economic strata became involved. However, the level of institutional education positively correlates with higher responsible consumption behavior according to him. Andorfer's (2013) research on self-reported ethical consumption behavior confirms the positive influence of educational background. Another notable outcome of this study is that social status tends to be an important influence on consumer's responsible consumption behavior. If responsible consumption behavior adds value to one's social status, individuals are more likely to incur the costs of consuming more responsibly. Consequently, an individual's social environment is considered as having a significant impact on the degree of one's responsible consumption behavior. Research by Zou & Chan (2019) results in similar findings, namely, that idealism of responsible consumption by the social environment positively correlates with consumers' decision to behave responsibly. Moreover, the literature after 1996 specifies that the younger population of generation Y and Z are prone to be responsible consumers, and even with a limited budget they are more likely to consume responsibly (Roberts, 1996; Skawińska, 2019; Zou & Chan, 2019).

Research on the practices and characteristics of the responsible consumer is thus broad and manifold. Yet, a collective outcome of all studies is that of the positive correlation between the level of education by social surroundings and the level of social responsibility of a consumer. Apart from that, responsible consumption behavior is often measured by the purchase of fair-trade or eco-friendly food, the recycling of waste, the choice for transportation, and the reduction in clothing purchases.

2.2 Value-Action Gap

Research shows that attitudes affect behavior. In their theory of reasoned action, Fishbein and Ajzen argue that "human social behavior follows reasonably and often spontaneously from the information or beliefs people possess about the behavior under consideration" (2011, p.20). In other words, people's actions are guided by the values they uphold. Differences in beliefs and values, according to Fishbein and Ajzen (2011), are rooted in differences in the sources of information and personal experiences.

The value-action gap diverges from this mode of thinking. During the last decades, concerns about environmental and sustainable issues increased significantly. At the same time, relevant changes in behavior fail to appear at an appropriate level (Kennedy, Beckley, McFarlane & Nadeau, 2009; Vermeir & Verbeke, 2006). Researchers around the world joined the discussion on how to characterize, explain, and identify this phenomenon and named it the value-action gap. Broadly said, the value-action gap can be defined by the imbalance between values individuals claim to uphold regarding certain concerns and the decisions and behaviors they de facto exercise (Barr, 2006; Blake, 1999; Chai et al., 2015; Kennedy et al., 2009; Vermeir & Verbeke, 2006). That is to say that individuals often articulate interests in responsible actions but rarely act on these accordingly. Within the discourse, different names discuss the same or closely related paradoxes. Whether it is the *value-action gap*, the *value-behavior gap*, the *attitude-behavior gap*, the *attitude-action gap*, or the *intention-action gap* (Chai et al., 2015; Flynn, Bellaby & Ricci, 2009; Kennedy et al., 2009; Kollmuss & Agyeman, 2002; Sheeran, 2002; Sheeran & Abraham, 2003; Vermeir & Verbeke, 2006), they all focus on the same thing; people say one thing while doing something different.

Literature concerning the value-action gap is manifold. Studied areas include personal health (Godin, Conner & Sheeran, 2005), fair working conditions, (Chatzidakis, Hibbert & Smith, 2007; Dickson, 2001), and sustainability and environmental consumerism which, in fact, presents the majority of research on the gap. While some researchers examine the overriding topics of the environmental value-action gap or combine several areas like Blake (1999), Kennedy et al. (2009), and Kollmuss and Agyeman (2002), others look at more specific aspects of environmental issues. Within the area of climate change, Chai et al. (2015) contribute to the discussion by deep-diving into the discrepancy between values and behaviors towards renewable resources while researchers like Whitmarsh, Seyfang, and O'Neill (2011) or Babutsidze and Chai (2018)

look at climate change from the angle of carbon emissions. Another study related to the lacking adoption of environmentally friendly transportation was conducted by Lane and Potter (2007). Still other researchers focus on topics like waste reduction (Barr, 2006; Chung & Leung, 2007) or sustainable fashion (Niinimäki, 2010). Further, a large amount of research on the value-action gap is done with regards to responsible food consumption. Whether it relates to ethical issues (Chatzidakis, Hibbert & Smith, 2007; Pelsmacker, Driesen & Rayp, 2005; Vermeir & Verbeke, 2006) or environmental issues (Lockie et al., 2002; Niessen & Hamm, 2008), there is a large discrepancy between peoples reported willingness to act and their factual actions when it comes to fair-trade and organic food choices. Another aspect often illuminated is the handling and usage of energy (Claudy, Peterson & O'Driscoll, 2013; Flynn, Bellaby & Ricci, 2009; Frederiks, Stenner & Hobman, 2015). As can be seen, the literature on the value-action gap is extensive.

Research on reasons for the gap is as diversified as the research on the existence of the gap itself. Past research has it that failure to act in appropriate ways is often understood to be the outcome of missing information and knowledge. Expressly, the absence of responsible actions results from unawareness about the need to act. Consequently, informing and educating people is thought to bring about desired actions (Courtenay-Hall & Rogers, 2002; Kennedy et al., 2004; Kollmuss & Agyeman, 2002). As research on the value-action gap identifies, informed individuals, and not even individuals who have formed values and intentions are not sufficient to translate into corresponding actions.

Kollmuss and Agyeman (2002) identify some of the reasons for the existence of the value-action gap in the environmental context. On a very general level, they differentiate between demographic factors such as age or gender, internal factors that are more closely bound to the individual like motivation, awareness, locus of control, and attitudes, and external factors such as economic, cultural, or social factors. Similarly, Kennedy et al. (2009) differentiate between-groupings according to the domains of the individual, household, and societal influences. Research also looks at different reasons more specifically and on a less general level. Some examples given include the unwillingness to pay price premiums for sustainable products or the inconvenient availability of such (Chai et al., 2015). While numerous researchers investigate a variety of reasons and explanations for the value-action gap, a consensus on a distinct answer is not given yet.

Research also proposes possible ways to close or reduce the gap. A large amount of research touches on social environments. Babutsidze and Chai (2018), for example, suggest that peer behavior largely influences how far people act on their values. Godin, Conner, and Sheeran (2005) study the importance of moral norms on the motivation and execution of behavior in line with intentions. They argue that when intentions are connected to moral norms, analogous behaviors are more likely to occur. Similar findings are also prominent in research by Vermeir and Verbeke (2006) who specifically focus on social pressure. Vermeir and Verbeke (2006) further investigate other solutions and state that involvement and certainty, for example, have a high influence on purchase behaviors and simultaneously argue that availability impacts intentions and behaviors. Another approach indicates that it is important to constantly remind people of what they value, especially directly before making a behavioral choice (Fazio, Chen, McDonel & Sherman, 1982). Again, there is no consensus and approaches rather minimize than fully close the gap.

As shown, the literature on the value-action gap is extensive and complex. It is crucial to not only look at what people say they care about but also at how far these values are mirrored in their actions. Researchers not only study how the gap can be defined and where such a gap can be found but also a vast amount of research tries to explain possible reasons for its occurrence and attempts to explain how the gap can be reduced. Social influences play a huge role in that respect.

2.3   Situational Consumption

Variability and unpredictability in consumer behavior are some of the main reasons for executing consumer research and understanding the value-action gap (i.e. Arnould & Thompson, 2005; Belk, 1975; Chai et al., 2015; Cova, 1997). With the growing inability of researchers to sufficiently understand and explain the variation in buying behavior, research on situational influences on behavior entered the field. For the aim of this research, we adopt Belk's definition of situational variables in consumer behavior who defines them as "all those factors particular to a time and place of observation which do not follow from a knowledge of personal (intra-individual) and stimulus (choice alternative) attributes and which have demonstrable and systemic effect on current behavior" (1975, p.158).

Past research on consumer behavior illuminates two different types of classifications and measurements with regards to situational variables. On the one hand, there are the obvious components of situational variables such as price, other person's presence, the time of the day or year, or financial situation (Belk, 1975; Kuhe & Bisu, 2019; Liu, Liu & Jiang, 2019). On the other hand, there are less observable situational factors present that affect consumer behavior, such as transitory or episodic states of the individual's moods, plans and, purposes (Hornik, 1982; Howard & Sheth, 1967).

Past research identifies numerous influences of situational consumption. One of the first studies on situational consumption was performed by Belk (1975). In his study, he clarifies two perspectives on situational variables, which are "psychological" and "objective" measurements. The psychological measurements rely on the consumer's perception of the situation, while the objective measurements restrict themselves to tangible features of the situation. Hornik (1982) investigates the effects of personal characteristics, personal preferences, and situational conditions (i.e. physical conditions, presence of other people, and mood) on the consumption of time. The results indicate a relationship between situational conditions and the consumption of time. Pitta, Fung & Isberg (1999) identify that the country of origin and the cultural context individuals live in have huge influences on consumer behavior and perceptions of norms and values with respect to what is considered responsible and ethical. Another perspective is discussed in a recent study on the influence of situational factors on household energy consumption conducted by Kuhe & Bisu (2019). The study measures the impact of accessibility and affordability of energy resources, household location, status, personal comfort, preferences, cultural issues, and residential spacing on a person's energy consumption behavior. The outcomes of the study acknowledge that the affordability of energy resources is the largest barrier for consumers to switch to more eco-friendly energy consumption.

Research declares the social environment as a major influence on situational consumption. The social environment within past literature is divided into normative and comparative reference groups. Reference groups refer to the different social groups that are important for individuals and against which they compare themselves (Escalas & Bettman, 2003). Normative groups refer to the reference groups that influence and develop a person's norms and values, such as family, friends, peers, or associates (Fernandes & Panda, 2019). Research also shows that the habits of family members set the foundation of an individual's social norms and values while growing up (Arnould & Thompson, 2005; Belk, 1975). Comparative reference groups, on the

other hand, are the ones, individuals wish to be associated with such as politicians or celebrities for example (Escalas & Bettman, 2003). Fernandes and Panda (2019) support the idea that consumption is a social decision-making process. Therefore, a consumer often makes purchase decisions based on the social values and norms of his reference groups as he aspires acceptance and belonging to these groups. Preference, behavior and, opine of friends are often considered as highly important when it comes to building social status and self-representation within the reference groups (Mi et al., 2019; White & Dahl, 2006). Consequently, friends and occupation were identified as the reference groups with the most impact when it comes to making consumption choices to gain a high or positive social status within these groups.

As revealed by de Castro (1988), reference groups influence the food choices people make. In his study, he analyzes in which social context (e.g. eating alone or in the company of others) people consume more high-energy food. Results show that the amount of energy-rich eaten food is 75% higher when people are eating in the presence of others. Findings from another study on social, temporal, and situational influences on meat consumption by Horgan et al. (2019) expose that the eating behavior of individuals fluctuates between eating with colleagues, family, friends, or alone. A particularly notable outcome is that the amount of meat consumption is greater in the company of family members in comparison to when being alone or with other companions. Mi et al., (2019) investigate the influence of reference groups on individuals' low carbon consumption. The results indicate that friends' and families' preferences, standards, and norms influence individual consumers' consumption behavior. When these reference groups accelerate pro-environmental behavior, individuals are more likely to adopt low carbon consumption behavior as well. Liu, Liu, and Jiang (2019) study the regulation of situational factors and their influence on low-carbon consumption among Chinese college students to explain the intention-behavior gap. This research outlines that policy and regulations, publicity and education, and social norms have a significant impact on low-carbon consumption behavior. On a different note, Kwon (1988) examined the effect of situational influences on the daily clothing choice process by looking at the differences between young adolescents/students, professionals, and suburban/non-working groups. The outcomes of the study identified that situational influences have the highest effect on young adolescents/students and the second-highest effect on professionals. This is because these groups are the most concerned about their self-representation and more sensitive to the opinions of their social environment in comparison to the non-working group.

On a different note White & Dahl (2006) explore the influence of dissociative reference groups, or in other words, this refers to reference groups an individual cannot or does not want to relate to and aspires not to be associated with. Outcomes of the study identify that consumers are less motivated to purchase a product when it is associated with dissociative reference groups. Moreover, it shows that the fear of bad self-representation in reference groups often drives the tendency to avoid purchasing products associated with dissociative reference groups.

Further, findings within the work of Giesler and Versiu (2014) reveal how social discourses, as part of governmentality, can shape the responsible consumer. Via their proposed P.A.C.T. routine (personalization, authorization, capabilization, and transformation) they depict how the responsibility of focal social problems is shifted from the state towards the individual, hence making the individual consumer socially responsible. This means that the norms, preferences, and behaviors of reference groups act as an influential situational variable on an individual's consumption behavior and seem to be an explanation for variability and unpredictability in consumer behavior.

2.4 Critical Reflection of Literature Review

During the revision of existing literature, three relevant streams of literature were identified. Namely, research on the responsible consumer, research on the value-action gap, and research on situational consumption.

By examining past research on the responsible consumer, it becomes rapidly apparent that there are two different views and timeframes within the literature with respect to identifying the characteristics of the responsible consumer. Early literature holds it that the image of the responsible consumer is that of a middle-aged person in the category generation X, with high professional accomplishments, tall socio-economic status, and a more conservative lifestyle while being less status-conscious (Anderson & Cunningham, 1972; Berkowitz & Lutterman, 1968; Webster, 1975). Research after 1996 has it that the younger generations of Y and Z are prone to consume the most responsible. They are not marked by a tall economic status but rather by social status and more likely to consume responsibly when it adds value to their social status (Andorfer, 2013; Roberts, 2020; Zou & Chan, 2019). Generation Y and Z are the generations born after 1981, while generation X is the referred to as the generation born between 1961 and 1981

(Ivanova, Flores-Zamora, Khelladi & Ivanaj, 2019; Průša & Sadílek, 2019). Consequently, a differentiation can be made between two age categories and the corresponding characteristics that mark the responsible consumer. A collective outcome of all studies is that of the positive correlation between the level of education by social surroundings on the level of social responsibility of a consumer regardless of age.

In the past two decades the responsibility for sustainability-related issues partly shifted from the hands of corporations and governments to those of the consumer. Inside and outside academia, it is often claimed that the larger part of the consumer of today indicates a willingness to consume more sustainable, which is referred to as the responsible consumer. Unfortunately, consumer behavior does not always mirror this meaning that there is an imbalance between what consumers say and what they de facto do (Babutsidze & Chai, 2018; Barr, 2006). This imbalance grasped the attention of academics who refer to this phenomenon as the value-action gap (Kennedy et al., 2009; Vermeir & Verbeke, 2006). The majority of research on the value-action gap surrounds environmental consumerism, including studies on climate change, waste reduction, responsible food consumption, sustainable fashion, and transportation. Within these areas researchers also investigate into reasons for the gap and possibilities to reduce it. Social aspects are identified as major contributors. The implications of the value-action gap for marketers are the invariability and unpredictability of consumer behavior. As self-reported responsible consumption values do not correspond with actual consumption behavior, marketers are restrained from developing accurate strategies that correspond with consumer behavior (Babutsidze & Chai, 2018; Chai et al., 2015; Cova, 1997).

Linking to the value-action gap and the growing inability of researchers to sufficiently understand and explain the variation in buying behavior, research on situational influences on behavior gained popularity (Belk, 1975; Horgan et al., 2019; Kuhe & Bisu, 2019; Liu, Liu & Jiang, 2019). Past research identifies numerous situational variables that affect consumer behavior such as physical conditions, personal preferences, demographical characteristics, and financial circumstances (Belk, 1975; Hornik, 1982; Kuhe & Bisu, 2019; Pitta, Fung & Isberg, 1999). Nonetheless, the social environment has been declared as the most significant influence (Belk, 1975; de Castro, 1988; Horgan et al., 2019; Liu, Liu & Jiang, 2019). In past literature, the social environment is commonly divided into reference groups, which refers to the different social groups that are important to a consumer and against which people compare themselves (Escalas

& Bettman, 2003). As consumption is a social decision process, consumers often make purchase decisions based on the social values and norms of their reference groups as they aspire to be accepted by the groups' members (Panda et al., 2020). The habits of family members set the foundation of an individual's social norms and values while growing up (Arnould & Thompson, 2005; Belk, 1975); preference, behavior and, opine of friends are often considered as highly important when it comes to building social status and self-representation within the reference groups (Mi et al., 2019; White & Dahl, 2006); occupational surroundings similarly have a significant impact on buying behavior. As each company has its own norms, values, rules, and working methods, individuals are more likely to adjust their purchasing behavior to fit the needs and wants of the social environment of their occupation (Anderson & Cunningham, 1972; Oppenheimer, 2013).

Putting these findings into the light of the two different age categories as defined above and characteristics that mark a responsible consumer, we identified the following relations. As previously mentioned, the responsible consumer that correlates with research before 1996 is aged between 35 and 60. This consumer is marked by a conservative lifestyle and low status-consciousness, while education by social surroundings and institutional education have a significant impact on one's responsible consumer behavior. Connecting this to the finding that habits of family formulate one's social norms and values while growing up, we can assume a link between the impact of the family reference group and the responsible consumer behavior for people aged between 35 and 60. Looking at the responsible consumer aged between 20 and 34, research indicates that social status has a significant influence on the decision process of consuming responsibly. As mentioned, the preference, behavior, and opine of friends are often considered as highly important when it comes to building social status and self-representation within this reference group. Therefore, it is assumed that younger individuals are largely influenced by friends.

The standard way of thinking has it that the larger part of the consumer aims at sustainable and ethical consumption patterns. Looking at the identified influence of reference groups on consumer behavior, we believe that this claim omits the different social environments consumers are operating in. Thus, we are in two minds about the claim that the larger part of the consumer aims at sustainable and ethical consumption patterns. On the one hand, we agree that sustainability is a topic of interest for many consumers. On the other hand, we argue that this claim does not apply to each individual or collective social environment the consumer operates in. After

evaluating past academia, we believe that there is a clear-cut gap in research on the controversy between a consumer's buying behavior in different social environments that needs to be explained to gain a deeper understanding of the value-action gap.

3 Theoretical Framework

Concepts are defined as abstract objects we cannot see which are used to summarize and describe behaviors that share certain characteristics (Burns & Burns, 2008). To make the concepts of responsible consumption and social environment more tangible and measurable, we translate them into a multitude of specific behaviors and events. Following Saunders, Lewis & Thornhill (2019) and Burns & Burns (2008), we develop a theoretical framework for the concepts investigated in this study. Based on this, the final part of this chapter introduces the working hypothesis for the present research paper.

3.1 Responsible Consumption Behaviors

Responsible consumption can mean everything and nothing. To measure the concept of responsible consumption, we aim to measure pro-environmental behavior. By that, we simply mean behavior that consciously seeks to minimize the negative impact of one's actions on the earth's ecosystem (Kollmuss & Agyeman, 2002; Roberts, 2020). Within past literature, academics identified a range of activities as responsible consumption practices. Four specific behaviors continuously return in numerous studies as can be seen in the literature review. Consequently, recycling, eco-friendly food consumption, transportation choice, and sustainable fashion consumption serve as measurements for the concept of responsible consumption in this study. For simplicity, this paper also uses the short forms of recycling, food, transportation, and fashion when referring to the variables.

Recycling - This study follows the definition of recycling as altering waste into new materials and objects (Skawińska, 2019). Recycling appears to be considered as a cure for all environmental problems, while at the same time being the most accessible activity for consumers to become responsible (Chung & Leung, 2007; Czajkowski, Zagórska & Hanley, 2019; Fiorillo & Senatore, 2020; Hinde, 2019). Within literature, repairing commodities instead of buying new goods is considered a form of recycling and responsible consumption (Chung & Leung, 2007; Skawińska, 2019). Furthermore, past research identifies waste separation by consumers as an important marker of responsible consumption as it enables larger corporations to recycle waste (Chung & Leung, 2007, 2007; Nainggolan et al., 2019).

Eco-friendly food consumption – The consumption of food and the meaning behind it has changed significantly in the past three decades (Klasson & Ulver, 2015). Food waste and the meat industry have become one of the most well-known treats to the environment inside and outside academia (de Castro, 1988; European Commission, 2019; Horgan et al., 2019). The purchasing habits uncovered in the literature that can decrease the negative effects of the food industry are the following: purchasing eco-friendly or fair-trade food (Andorfer, 2013; Kushwah, Dhir & Sagar, 2019), reducing food waste (da Silva, Luiz Diaz & Braga, 2020), and eating "green" which refers to decreasing the amount of meat one consumes (Horgan et al., 2019; Lockie et al., 2002; Panda et al., 2020).

Transportation choice - Within the literature, the choice of transportation is a variable frequently used to measure responsible consumption behavior. Babutsidze & Chai (2018) measure responsible transportation behavior via the amount respondents travel with airplanes or public transportation or use carpooling options. Whitemarsh, Seyfang & O'Neill (2011) asked respondents if they walk, cycle, take public transport, or share car rides for short journeys instead of using a car; and in a similar vein Braga, da Silva & Luiz (2020) studied whether participants prefer taking public transport or bike riding over taking the car or a taxi.

Sustainable fashion consumption – Within the research of the past two decades, the (fast-) fashion industry is often held accountable for environmental problems (Anguelov, 2015; Bick, Halsey & Ekenga, 2018; De Brito, Carbone & Blanquart, 2008; Niinimäki, 2010). Quoquab & Mohammad (2016) define one of the characteristics of responsible consumption as the moderation in expenditure, meaning not consuming more than one needs. Relating this to the practice of sustainable fashion purchasing behavior, two practices become noticeable within former literature. The first one is eco-fashion, which can be explained as clothing designed for long lifetime-use (De Brito, Carbone & Blanquart, 2008; Niinimäki, 2010). The second one refers to a boycott or minimizing purchases of fast fashion brands as these brands are associated with poor working conditions, low quality of clothes, and significant harm to the environment (Anguelov, 2015, 2015; Bick, Halsey & Ekenga, 2018).

Figure 3.1 visualizes which elements are used to measure responsible consumption in this research.
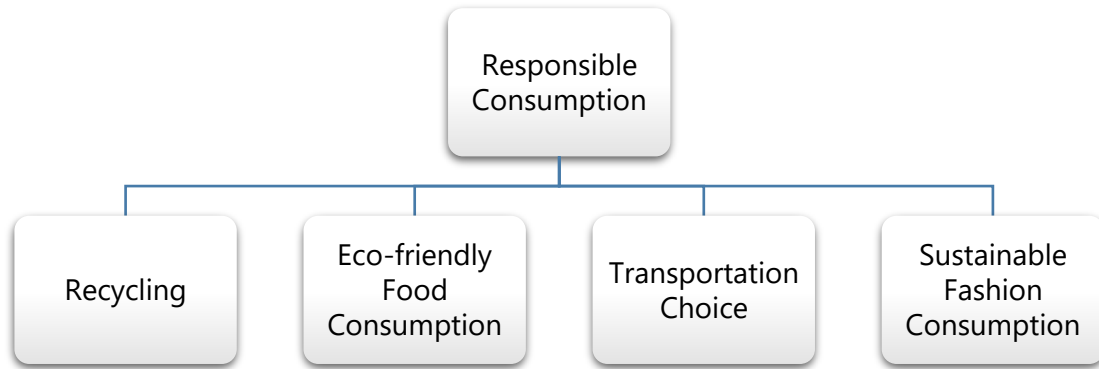
Figure 3.1: Responsible Consumption Behaviors

3.2 Social Environments

This research aims to measure the impact of social environments on responsible consumption behavior. As identified within the literature review, there are two classifications with regards to situational variables, namely, the obvious and the less obvious (Belk, 1975; Horgan et al., 2019; Hornik, 1982; Kuhe & Bisu, 2019; Liu, Liu & Jiang, 2019, 2019). The social surrounding falls under obvious variables. Within past research, findings indicate that the social environment has a significant impact on consumption. Babutsidze and Chai (2018) suggest that peer behavior influences how far people act on their values. Godin et al. (2005) outline the importance of the moral norms of the social environments on the motivation and execution of behavior in line with intentions. Vermeir and Verbeke (2006) focus specifically on social pressure of the social environment, and Fishbein & Ajzen (2011) illuminate that the social environment provides us with different sources of information all the time and these sources of information consequently influence our personal values.

While investigating previous studies, it becomes obvious that numerous academics repeatedly use three groups to define the social environment. Concretely, these are family, occupation, and friends (Horgan et al., 2019; Hornik, 1982; Kennedy et al., 2009; Kuhe & Bisu, 2019; Liu, Liu & Jiang, 2019). As previously mentioned in the literature review, education by social surroundings is considered a significant influence on an individual's consumption behavior. Alongside this, research on consumer behavior commonly recognizes that the habits of family formulate an individual's social norms and values while growing up (Arnould & Thompson, 2005; Belk, 1975). Another research shows that when entering the occupational environment, an individual is introduced to other individuals with different backgrounds, cultures, and perhaps norms and

values (Liu, Liu & Jiang, 2019). This shapes one's behavior accordingly to the norms and values of this social environment and results in a fluctuation in consumption behavior (Belk, 1975; Horgan et al., 2019; Liu, Liu & Jiang, 2019). Hence*,* social environments in this research refer to three contextual groups; namely, family, friends, and occupation. For the aim of this research, family is referred to as the first-degree relatives, which are, brothers, sisters, and parents (Horgan et al., 2019). Group of friends, refers to friends who are included in an individual's daily life (Panda et al., 2020). Occupation refers to work and institutional education-related environments like school and job (Chung & Leung, 2007). We desist from setting up measurements to clearly define these social environments. We assume that through similar socialization of the sample population individuals are likely to have similar understandings of these notions. Figure 3.2 shows which social environments this research considers.
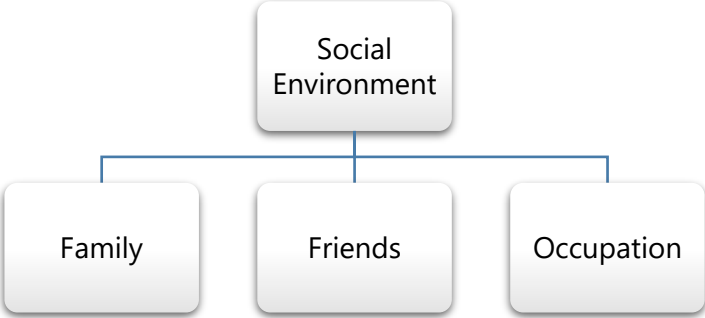
Figure 3.2: Social Environments

3.3 Hypotheses Formulation

Since the relationship between the concepts of social environments and responsible consumption behavior has not been studied before, we conducted an extensive review of past research of the responsible consumer, the value-action gap, and situational consumption before executing this research. We critically evaluated this research and translated it into the research problem that forms the foundation of our research. The problem – we term the *action-action gap* – deals with fluctuating consumption behavior in different social environments. Due to the prevailing importance of situational consumption in understanding the variation in buying behavior and a lack of research on situational consumption within the value-action gap, our objective is to research the effect of situational variables on responsible consumption behavior. More

specifically, we study the influence of social environments on self-reported responsible consumption behavior.

As mentioned before, the effects of different social environments on responsible consumer behavior have not been tested yet. Within past research the validity of these concepts has been proven individually but not together. Our research question of *"How do different social environments influence responsible consumption behavior?"* is investigated and answered in several steps. As prior research has proposed, situational variables and in particular the social environment proved to have an impact on consumer behavior. However, this has not been tested in relation to responsible consumer behavior. Therefore, the purpose of the first hypothesis is to confirm whether there is a difference in individuals' responsible consumption behavior in different social environments. This translates into the following non-directional statistical hypothesis:

> H_1: There is a significant mean difference in individuals' responsible consumption behavior in different social environments.

Independent Variable:
Social Environment

Dependent Variable:
Responsible
Consumption Behavior

Figure 3.3: Conceptual Framework H_1

Further, we also split up the idea of responsible consumption into the different behaviors of recycling, eco-friendly food consumption, transportation choice, and sustainable fashion consumption. As depicted in Figure 3.4, we consequentially diversify our hypothesis in several sub-hypothesis for each of these dimensions of responsible consumption.
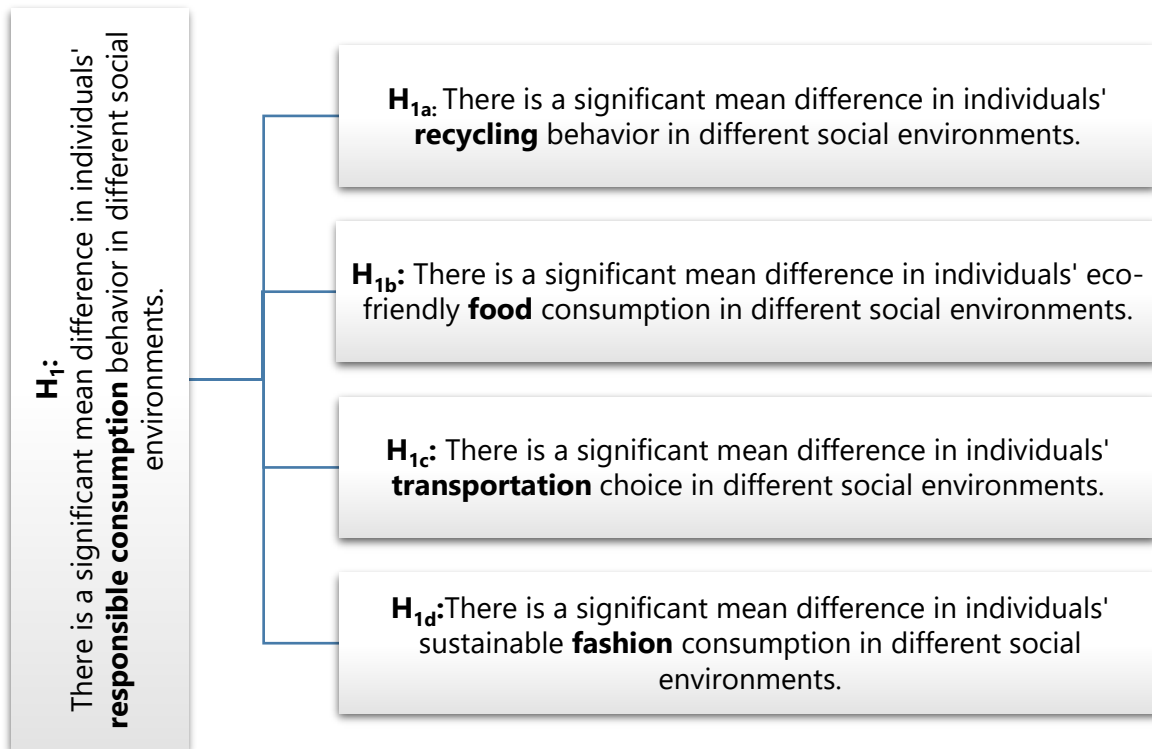
Figure 3.4: Subdivision of Hypothesis 1

Moving on from this, past literature indicates two different views on the characteristics of the responsible consumer. Early literature defines the responsible consumer as a middle-aged person with high professional accomplishments, tall socio-economic status, a conservative lifestyle, and less status-consciousness (Anderson & Cunningham, 1972; Berkowitz & Lutterman, 1968; Webster, 1975). Research after 1996 displays contradicting views and states that the responsible consumer is aged within the age category of generation Y and Z. This generation of responsible consumers is not marked by a tall socio-economic status. Besides, they are more status-conscious and thus likely to consume responsibly when it adds value to their social status (Andorfer, 2013; Quoquab & Mohammad, 2016; Skawińska, 2019; Zou & Chan, 2019). This corresponds to two different age groups, namely, the generation Y and Z, aged between 18 and 34 and the generation X, aged between 35 and 65. We assume that these different age groups are influenced by different social environments. Consequentially, the second hypothesis aims to confirm the influence of age on the relationship between social environments and responsible consumption behavior. At last, we assume a positive relationship between the influence of family on consumers aged between 35 and 66 and a positive relationship between the influence of friends on consumers aged between 18 and 34 within past literature. Hence, we formulated the hypotheses accordingly.

H₂: Age has a significant influence on the effect of social environments on responsible consumption behavior.

H₃: For people aged between 18 and 34 friends have the highest influence on responsible consumption behavior.

H₄: For people aged between 35 and 65, family has the highest influence on responsible consumption behavior.
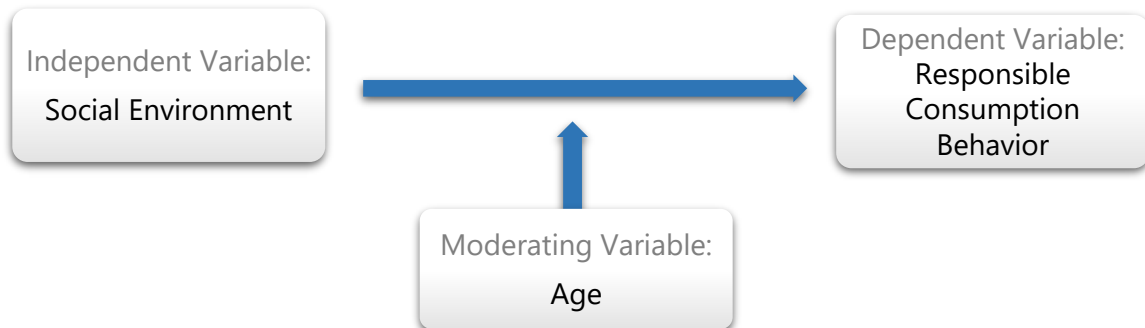
Figure 3.5: Conceptual Framework H₂, H₃, H₄

As with our first hypothesis, we again also analyzed the effect of social environments on recycling, eco-friendly food consumption, transportation choice, and sustainable fashion consumption and created sub-hypotheses for each of the behaviors. Figure 3.6 shows the corresponding hypotheses for H₂. H₃ and H₄ accordingly accompany each of these hypotheses.

H₂: There is a significant interaction effect between age groups and social environments when it comes to **responsible consumption** behavior.

H₂ₐ: There is a significant interaction effect between age groups and social environments when it comes to **recycling** behavior.

H₂ᵦ: There is a significant interaction effect between age groups and social environments when it comes to eco-friendly **food** consumption.

H₂ᵧ: There is a significant interaction effect between age groups and social environments when it comes to **transportation** choice.

H₂ᵩ: There is a significant interaction effect between age groups and social environments when it comes to sustainable **fashion** consumption.

Figure 3.6: Subdivision of Hypothesis 2

Figure 3.7 illustrates the setup of the framework of this research.
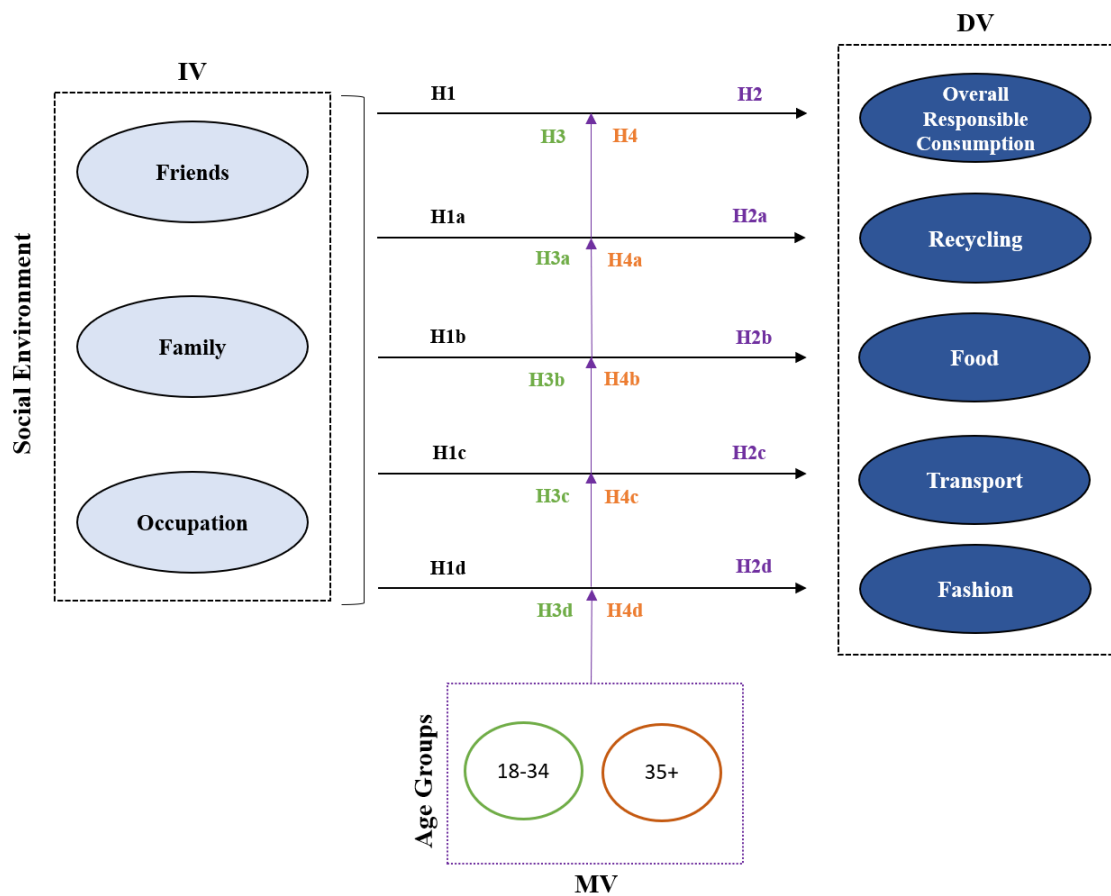
Figure 3.7: Research Framework

4 Methodology

According to Easterby-Smith, Thorpe, Jackson and Jaspersen (2018, p.61), the methodology is "a combination of methods used to enquire into a specific situation". Aiming to understand the underlying research phenomenon, the methodology chapter provides an overview of the research approach, its design, and the data collection methods. To set a basis, the research approach chapter first outlines the philosophical grounding of the research as well as the deductive nature of our thesis. Followed by that, the research design looks more closely at the survey setup and measurement as well as scaling procedures. The data collection process explains how the study was set up and executed. Finally, this chapter also outlines some considerations about the research quality assessment and the limitations of the methodological design of this research.

4.1 Research Approach

The elementary starting point of any research is the philosophical grounding and therefore the underlying assumptions of a research paper. It is crucial to understand from what point of view researchers approach their work and how the research is designed and conducted (Easterby-Smith et al., 2018). The two major levels of philosophy that should be considered when setting up the research approach are ontology and epistemology since based on this one can better understand and reason for appropriate methods and techniques to use (Easterby-Smith et al., 2018).

As discussed by Easterby-Smith et al. (2018), in the very center of every research study, there is the ontology, explaining the basic assumptions about the nature of reality. According to them, there are four different ontologies one can distinguish: realism, internal realism, relativism, and nominalism. The main difference between these is the view on truth. Realism assumes that there is only one truth that can be revealed. Internal realism agrees that there is only one truth, but it supposes that it is difficult to directly observe it. Relativism, on the other hand, assumes that there are multiple possible truths while nominalism argues that there is no such thing as truth because everything is humanly constructed. In this study, we investigate to what extent the social environments individuals act in influence responsible consumption behavior. Therefore,

we believe that there is a single truth that can be investigated. Nonetheless, these influences cannot be observed directly meaning that the reality we are looking at is difficult to understand for researchers straight away. As we cannot directly observe objective facts but have to rely on indirect measurements instead, we adopt an internal realism stand (Easterby-Smith et al., 2018).

On the outer level of a philosophical setup, there is the epistemology which deals with researchers' viewpoints on the nature of the world and how to conceptualize the idea of knowledge (Easterby-Smith et al., 2018). There are two conflicting epistemologies, namely positivism and social constructionism (Burns & Burns, 2008; Easterby-Smith et al., 2018). While the positivist epistemology is based on very objective measures and observable data, social constructionism is more subjective and based on individual interpretations (Burns & Burns, 2008; Easterby-Smith et al., 2018). In this study, we are aiming to obtain findings that are independent of the observer. In the words of Easterby-Smith et al., that translates into a "social world [that] exists externally" and whose "properties can be measured through objective methods, rather than being inferred subjectively through sensation, reflection or intuition" (2018, p.69). Thus, this study follows a positivist epistemology.

In general, positivist epistemologies are a good fit for realist ontologies (Easterby-Smith et al., 2018). We follow this argument and take on a positivist approach meaning that we focus on studying large samples to generate generalizations based on defined and measurable concepts that are used to test our hypotheses. Based on these, we now define more specifically how we approach our research.

In line with our positivist, realist philosophical orientation, the present thesis pursues a quantitative, deductive research approach. Quantitative research aims to generate general principles based on factual data, numbers, large samples, and statistical models (Burns & Burns, 2008). Burns and Burns state: "The starting point of quantitative research is theory" (2008, p.85). That means that deductive research processes follow a top-down strategy, having their starting point in existing theories that are used to develop statistical hypotheses that can then be tested to get confirmed or reject (Burns & Burns, 2008). The hypotheses developed in our research derive from these existing theories, and consequentially the approach of this research can be considered as deductive.

When it comes to data collection, there are two ways in which data can be collected and compared; the design can follow a longitudinal or a cross-sectional strategy (Burns & Burns, 2008).

In this study, we used the latter approach, meaning that we collected data only once from different groups instead of comparing data gathered over time (Burns & Burns, 2008). We selected the participants for the samples randomly, creating homogenous groups. The data from these samples were then compared to each other. This way of analyzing data is called between-group design (Burns & Burns, 2008). The tool we used to collect data is a survey. Surveys are commonly used instruments in descriptive studies (Burns & Burns, 2008). An in-depth explanation of our survey design follows in the subsequent chapter.

4.2 Research Design

The research design provides "a framework for the collection and analysis of data" (Burns & Burns, 2008, p.100). It lays the foundation for every research and specifies the how, what, and why of a study (Malhotra, 2010). Burns and Burns (2008) identify four different types of research studies; research can be exploratory, descriptive, correlational, or experimental (Burns & Burns, 2008). This study followed a descriptive approach. We investigate into consumption behavior; we did not manipulate or alter any conditions and thus have no control over the outcomes; we simply work with observed behaviors. All of these attributes characterize a descriptive research design (Burns & Burns, 2008; Malhotra, 2010). As mentioned before, we used a questionnaire for our research. The following chapters explain the questionnaire design and how we set up measurements and scaling procedures in more detail.

4.2.1 Questionnaire Design

To study the effect of social environments on responsible consumption behavior, we choose a web-based survey design. In very simple terms, a survey involves the "process of collecting information for a sample of people who have been selected to represent a defined population" (Burns & Burns, 2008, p.486). Collected information is often used to compare between individuals of a sample and to draw conclusions about the larger population (Burns & Burns, 2008; Malhotra, 2010). Questionnaires are a tool to gather descriptive data that can then be used for inferential purposes (Burns & Burns, 2008). Online surveys are increasingly gaining attention (Burns & Burns, 2008). Not only because they are time- and cost-efficient to operate, but also because they reach large samples and a variety of question formats are available (Burns &

Burns, 2008). The quality of a survey and its output largely depends on a thought-through and neat design and implementation (Burns & Burns, 2008).

To link back to the aim of the research and to generate an understanding of the influence of social environments on individuals' responsible consumption behavior, the purpose of the survey was to measure the relationship between these concepts. It needs to be preempted that we used three similar but different surveys for our research. We allocated each of these surveys to one of the social environments under consideration. Questions stayed the same in terms of the variables and the items that measure each variable but were aligned with the corresponding environment. As identified within past literature, responsible consumption behavior can be measured by an individual's self-reported recycling behavior, eco-friendly food consumption, transportation choices, and sustainable fashion consumption. To measure responsible consumption behavior in the context of different social environments, we adopted existing questions from previous literature and modified them accordingly to measure responsible consumption behavior in relation to the different social environments.

As mentioned earlier, this study follows a cross-sectional research design. Groupings in this study were not based on demographic differences; the aim is to have three homogenous groups. Instead, we based the groups on the different surveys we assigned to them. We chose this method for different reasons. A major one is that assigning the questions for all of the environments under consideration to all participants would have resulted in a lengthy questionnaire where participants are demotivated to answer the survey throughout (Easterby-Smith et al., 2018). Also, respondents would have been likely to detect the purpose of the study allowing them to manipulate their answers (Saunders, Lewis & Thornhill, 2019).

A major consideration in the survey design is how questions are asked. Open-ended questions allow participants to freely write out an individual answer without any restrictions; closed-ended questions on the other side are more standardized and make responses less flexible but also make analysis more objective (Burns & Burns, 2008). A close-ended questionnaire is suitable for this study since we are interested in comparing answers on an objective basis and open-end questions would need to be subjectively coded and analyzed.

Coming to the structure of our survey layout, the first page of our survey introduced the participants to the purpose of the study and provided confidentiality and anonymity information. Further, to encourage the part-taking, it informed the participants about the approximate time

needed for completion. On the next page, we implemented a screening question. Since we are only investigating the Swedish population, people were asked whether they are a Swedish citizen, and individuals answering "No" got directed directly to a screen-out page thanking them for their participation. For all qualified participants, the next page collected all relevant demographic information such as gender, age, and current occupation. In the body of the survey we asked specific questions about responsible consumption behavior. For these questions, participants got randomly assigned to one of the three social environments. Here, every variable was measured by three questions. The construction of the final statements in themselves are based largely on the findings presented in the literature review and the variables introduced in the research approach. Table 4.1 lists the Likert scale statements for the social environment of friends. It further presents examples of researches that used comparable questions to test similar variables.

Table 4.1: Likert Scale Statements for the Social Environment Family

		Questions for measuring responsible consumption behavior for the Social Environment Friends	Source
Responsible consumption	Recycling	1. When with my family, I place higher importance on waste separation than usual.	(Whitmarsh, Seyfang & O'Neill, 2011)
		2. When I go shopping with my family, I buy more recycles products than usual.	
		3. When with my family and I am more likely to repair broken products instead of buying new ones than usual.	
	Eco-friendly food consumption	4. When with my family, I buy more bio-labeled products for meals than usual.	(da Silva, Luiz Diaz & Braga, 2020)
		5. When with my family, I try to minimize food waste than usual.	
		6. When with my family, I eat less meat than usual.	
	Transportation Choice	7. When with my family, I walk or use public transport for short distances more often than usual.	(Whitmarsh, Seyfang & O'Neill, 2011)
		8. When with my family, I avoid taking flights more than usual.	
		9. When with my family, I use the car less often than usual.	
	Sustainable fashion consumption	10. When meeting my family, I feel the need to wear new clothes more than usual.	(Kwon, 1988)
		11. When buying clothes to wear when seeing my family, I pay higher attention to long-lasting and eco-friendly clothes than usual.	(Whitmarsh, Seyfang & O'Neill, 2011)
		12. When buying clothes to wear when seeing my family, I buy more second-hand clothes than usual.	

To reduce confusion, we grouped questions measuring the same variable together (Easterby-Smith et al., 2018). This means that, for example, all questions measuring responsible food consumption followed each other consecutively without disruptions by questions on recycling, eco-friendly food consumption, transportation choice, or sustainable fashion consumption. To ensure a high number of complete surveys we further marked all questions as mandatory meaning that they could not be skipped. On the final closing screen of the survey we thanked partic-

ipants for their participation and provided contact details for questions or comments. This structure also corresponds to what Burns and Burns (2008) suggest. Figure 4.1 illustrates the composition of the survey.
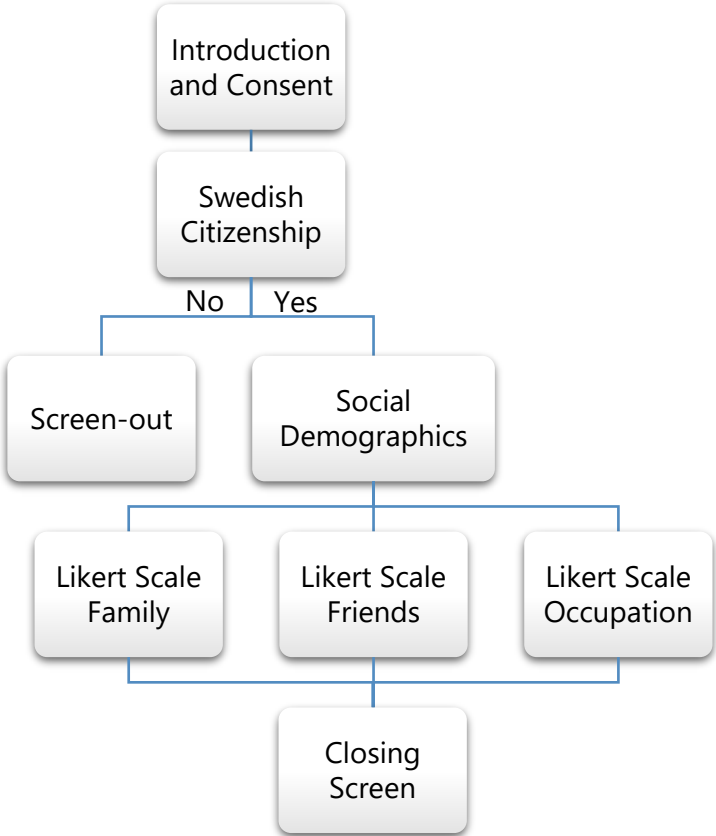
Figure 4.1: Survey Flowchart

We created the survey using the German online survey application tool, *SoSci Survey* (SoSci Survey, n.d.a). *SoSci Survey* allows researchers to create user-friendly surveys, optimized for desktop- as well as mobile-display and offers a broad range of functions and specifications that are not available for many other free survey applications (SoSci Survey, n.d.b). A feature especially important to us is the randomization that allowed us to randomly allocate the three different surveys to participants. The complete questionnaire can be found in appendix A.

4.2.2 Measurement and Scaling

Setting up and implementing the right measurement and scaling procedures is crucial for decent research (Burns & Burns, 2008). Measurement refers to the "process through which observations are translated into numbers" (Burns & Burns, 2008, p.114). Gender for example often gets coded as (0) male and (1) female. The purpose of coding variables is to make them usable for data processing and analysis (Burns & Burns, 2008). Scaling is closely linked to measurement since it creates "a continuum upon which measured objects are located" (Malhotra, 2010, p.250).

However, not every construct can be observed and translated as easy as gender. Where a construct cannot be observed directly, it is common practice to select a set of items that are assumed to reflect the construct. The variables that cannot be directly accessed are called latent variables (Easterby-Smith et al., 2018). To evaluate these latent variables, observed variables are used that can be measured directly (Easterby-Smith et al., 2018). In our study, we focus on the notions of responsible consumption. As indicated in the literature review and theoretical framework sections, this concept is very complex and cannot be observed directly. While there are various adequate measures, this research measures responsible behavior based on four categories: recycling, eco-friendly food consumption, transportation choice, and sustainable fashion consumption. We devoted three questions in the survey to each of these categories. Similarly, groupings of social environments vary largely within the literature. We identified three major reference groups that were repeatedly discussed in existing research; namely, these are occupation, family, friend groups. As mentioned before, we desist from further defining these groupings.

In general, there are four different scales of measurements: nominal, ordinal, interval, and ratio scales (Burns & Burns, 2008; Malhotra, 2010). Nominal measures simply use numbers to label data to differentiate between classifications; for ordinal data, numbers indicate the position of objects in relation to each other and are based on a sequential order; interval data further allows us to compare the difference in distance between objects; and ratio data advances even more by providing a meaningful zero (Burns & Burns, 2008; Malhotra, 2010). Said briefly, the scales differentiate each other by the degree to which assigned numbers can be interpreted.

In our survey, all questions regarding the responsible consumption behavior are scale questions. Scale questions ask for opinion which in the present case refer to self-reported consumption behaviors (Burns & Burns, 2008). Within scale questions one can either ask for the frequency with which something is occurring or about the intensity for example of agreement with certain statements (Burns & Burns, 2008). Rather than simply asking for agreement vs. disagreement, agreement is better measured by a range of answer options indicating the strength of agreement like in a Likers scale (Easterby-Smith et al., 2018). Our study implemented intensity scale questions using Likert scales.

The Likert scale was introduced by Likert in 1932 (Rinker, 2014). It is a measurement tool that asks participants of a study about (dis-) agreement with prepared statements and is often used to measure attitude (Burns & Burns, 2008; Malhotra, 2010). Lower numbers generally indicate a negative attitude while higher numbers indicate a positive attitude (Burns & Burns, 2008; Malhotra, 2010). In most cases, it is useful to design scales balanced around a mid-point (Burns & Burns, 2008; Easterby-Smith et al., 2018). In our study, we used a 7-point Likert scale ranging from (1) very strongly disagree to (7) very strongly agree with the neutral mid-point option at 4.

A major disadvantage of Likert scales is that researchers often interpret them as interval data, implying that there is a meaningful distance between measurement points. But it needs to be noted that a Likert scale does not represent equal intervals between the answer options (Burns & Burns, 2008; Malhotra, 2010). A score of 4 cannot be interpreted as twice the agreement than a score of 2. This means that Likert scales do not produce interval, but only ordinal data.

We used the Likert scale method because it offers an easy way to collect unbiased empirical data without the need for subjective judgments while also assuring high validity and reliability (Burns & Burns, 2008; Easterby-Smith et al., 2018). Further, Likert scales are easy to construct for researchers and easy to understand for participants (Malhotra, 2010). Looking at scaling methods used for similar studies in the past, literature further strengthens the choice of a Likert scaling method. Likert scales are a heavily used tool when it comes to research on responsible consumption behavior throughout history. Mi et al. (2019), for example, present a quite recent study on the influence of reference groups on low-carbon consumption using a 5-point Likert

scale on their research. Roberts (1996), on the other hand, serves as an example of older research that already used a Likert scale to study attitude towards ecologically conscious consumer behavior.

Altogether, Likert scales serve as a valuable measurement tool where the benefits outbalance the disadvantages. Conclusions should be drawn mindfully, and it is important to be aware of potential downsides. But when taking these into account during analysis possible misinterpretations can be eliminated.

4.3 Data Collection

This section unveils how we collected data for the study. The sampling approach outlines by which criteria participants for the study were selected, how they were found, and how the sample size was determined. Further, before rolling out the survey on a large scale, we conducted a pre-test. Consequently, this chapter presents short insights into the pre-test and its purpose of clarifying contextual and technical uncertainties in questionnaire design. The last sub-chapter explains the final data handling process.

4.3.1 Sampling Approach

When studying any kind of phenomenon, it is unlikely to study a census, meaning that one considers every element of a population on its own. Instead, researchers use samples to represent the population (Malhotra, 2010). Carefully characterizing a population and its sample and planning how to select elements for a sample is crucial to draw reliable conclusions (Easterby-Smith et al., 2018).

As indicated in responsible consumer, it is difficult to come to a consensus when characterizing responsible consumption behavior. In different contexts, different behaviors might be perceived as responsible. Especially, the country of origin and the cultural context individuals live in have huge influences on their perceptions of what can be regarded as ethical or responsible (Pitta, Fung & Isberg, 1999). Sweden, a country placing especially high emphasis on sustainability is regarded as a pioneer of responsible consumption in westernized culture (Tamanini, 2016). Based on this, on a broad conceptualization, the target population we investigated are Swedish

citizens. We explicitly aimed to exclude other people currently living in Sweden, like international students, since certain cultural and deeply rooted values might distort the interpretation of different social environments participants might consider when taking part in the study.

Whether it is buying a car or a package of milk, consumption is a practice carried out by each adult in the population on a regular basis (Arnould & Thompson, 2005). Thus, we did not consider specific income or societal groups when assigning sample criteria. Instead, we chose participants based upon the ability to make independent and free consumption choices. Putting this within the context of our focus, to write this research with an outlook on the future, we considered a population aged between 18 and 65. The sampling elements for this study were individuals who were also our first level sampling units (Easterby-Smith et al., 2018).

Another important consideration besides the target sample characteristics is the sample size. One might be mistaken that the sample proportion matters a lot. But as Nguyen (2005) explains that is not the case. Rather than looking at the proportion, he argues that a large enough sample is sufficient to draw conclusions about the whole population no matter the proportion. Based on population numbers of 2019, the approximate population size for this study is 5,271,000 people (Statista, 2020). Drawing a proportionate sample from this population would have taken resources beyond the scope of this study. Agreeing with Nquyen's (2005) argumentation we drew a sample that represents the population fairly well, trying to match our frame population as close to the target population as possible without claiming it to be a substantial percentage of the population.

A common rule of thumb says that a sample size with n = 30 is an appropriate rough calculation that can be used to ensure a large enough sample. The *Central Limit Theorem* also uses this size, saying that once a sample has a minimum of 30 members a normal distribution can be approached (Burns & Burns, 2008). As explained in the chapter on the questionnaire design, there are three variations of our survey. Having a minimum of 30 participants for each of these surveys would have added up to 90 participants. Academics also agree that findings are more reliable, the larger a sample gets (Burns & Burns, 2008; Easterby-Smith et al., 2018; Nguyen, 2005). Following our positivist epistemology, we used this approach, aiming to normalize the distribution by increasing our sample size as much as possible to make our outcomes generalizable to the larger population. Given the capacities, scope, and time frame of this study, we wanted to extend the number of participants, aiming for at least 60 participants per survey which

would total a minimum sample size of 180 participants. Taking into consideration that not all people who get the survey answer it and incomplete surveys are neglected in our analysis, we wanted to ensure a distribution of our survey to at least 250 people to ensure a total of 180 completed surveys. With a total of 410 completed surveys by the end of data collection the intended ambitions got exceeded by far.

To recruit participants, we drew from different sources. There are two basic categories of sampling design, namely probability and non-probability sampling (Easterby-Smith et al., 2018; Malhotra, 2010). Even though not desirable, we used non-probability sampling due to the limited access to a complete list of the whole population, as well as resource constraints. Non-probability sampling, in contrast to probability sampling, excludes some individuals of a population from the possibility of being picked for the sample because the selection is not perfectly random and therefore leads to outcomes that might not represent the population correctly (Burns & Burns, 2008). In the first instance, we selected our participants using a convenience sampling approach, meaning that we chose individuals that were easy to access for us (Burns & Burns, 2008). We distributed our survey using our Lund University network of students and teachers, as well as other university- and work-related environments in Lund, Malmö, Gothenburg, Uppsala, and Stockholm. We also used *WhatsApp*, *LinkedIn,* and *Facebook* groups to reach out to Swedes. On a second level, we used snowball sampling by asking some of our primary contacts to further distribute the survey to their Swedish friends, colleagues, and families (Burns & Burns, 2008). Hence, there is a zero chance of inclusion for some elements of our population. Apart from diversifying our primary survey distribution to different occupation, age, and other characteristic groups, we tried to account for randomization as well as possible by an automatized random distribution of the three different surveys.

4.3.2 Pre-Test

In the best case, one does not want to change a survey once the data collection started (Burns & Burns, 2008). To ensure that a questionnaire is easy to understand by participants, questions are formulated appropriately, and to account for any technical or other issues, pre-testing a survey is essential (Burns & Burns, 2008; Malhotra, 2010). Typically, a pre-test involves sending out a complete draft of the survey (including wording, sequence, layout, etc.) to a limited

number of people similar to the later participants who answer the questions and give feedback on the survey (Burns & Burns, 2008; Malhotra, 2010).

For this study, we carried out a pre-test among 13 respondents. Together with the link to the survey, they obtained a short text asking them to pay attention to possible errors in question or layout design. For the pre-test, all three variations of the survey were provided to the respondents. The tool used to gather data, *SoSci Survey*, further allowed us to provide comment fields for every page of the questionnaire during the pre-test period. After participants completed all questions, we further asked them about the overall perception, flow, and understanding of the survey. All of the participants were relatively close to at least one of the researchers to ensure they are taking the test seriously and that they provide extensive and thought-through feedback. We assessed the critique and comments based on the frequency of occurrence of certain issues and based on personal judgments. We incorporated changes to the questionnaire design accordingly.

Overall, the survey positively surprised the pre-test respondents. Reasons stated include the short duration and the easy understandability of questions. They also expressed their delight about the well-working mobile view. An issue raised by various respondents was the uncertainty about which option to choose when they could not relate to a statement or when it was simply not applicable to them. We thus included a N/A (not applicable) option for all the Likert scale statements, coded with the number 8. Additionally, many participants suggested a clarification of the given reference group in contrast to other environments. In line with this, we added a sentence in the section introduction and adjusted the statement structure for the Likert scale statements. Apart from that, only minor wording issues had to be adjusted to finalize the survey for the final, empirical data collection.

4.3.3 Final Data Collection

For the actual gathering of data, we used a web-based survey that we distributed through a link that directs respondents to the questionnaire. The tool used to set up and conduct the survey is *SoSci Survey* (SoSci Survey, n.d.c). As explained in [questionnaire design](#), we used three variations of the survey. *SoSci Survey* has a built-in function to automatically distribute these on a random basis. We employed this function to avoid a judgmental allocation. Using this online

survey approach allowed a fast distribution and simplified data analysis as all the collected data is available in different document formats that could be used for analysis purposes.

The distribution of the survey was carried out through a link and in congruence with what was defined in the [sampling approach]. Besides groups on the social media platforms *Facebook*, *LinkedIn*, and *WhatsApp,* we used private messages as well. Even though privately contacting people takes more time, it also ensures higher response rates (Burns & Burns, 2008). As mentioned, we also asked some of the Swedish participants to further distribute the link in their private and job-related networks. Since our questions were mainly close-ended and self-explanatory, there was no need for an interviewer, so anonymity was guaranteed. The researchers did not disturb or observe the participants at any given time. As our research involves a sensitive topic where social desirability plays a huge role, this anonymity lowered the effects of social desirability that would have been present in personal interviews or group discussions where people are influenced and observed by other participants or the interviewer.

The data gathering took place within a time period of two weeks between 11th April 2020 and 25th April 2020 giving us enough time to obtain and analyze the data. For the completed data collection, *SoSci Survey* provides the raw data in different formats including *Excel* and *SPSS* files (SoSci Survey, n.d.d). Therefore, data could easily be transcribed directly into *SPSS* and *Excel*, which we used together with *Jamovi* for analysis and graphical illustration.

4.4 Research Quality Criteria

The criteria for assessing the quality of quantitative research can generally be subdivided into two dimensions, validity and reliability. Variability relates to the extent a concept is measured accurately while reliability is the degree to which a research instrument realizes consistent results when used repeatedly in the same environment (Heale & Twycross, 2015). Additionally, social desirability presents the most prominent bias of this study.

4.4.1 Validity and Reliability

Within validity, a distinction is made between internal validity and external validity. To start, internal validity is defined as the "degree to which the results are valid within the confines of the study" (Burns & Burns, 2008, p.431). In other words that means that the findings of a study and the theories developed are consistent and aligned (Burns & Burns, 2008; Saunders, Lewis & Thornhill, 2019). There are three different measurements on validity that are relevant for this research – content validity, face validity, and construct validity (Burns & Burns, 2008).

Concerning the questionnaire design, content validity means that the questionnaire is able to correctly measure all the aspects of the study and that they cover the content needed (Burns & Burns, 2008). The variables chosen to measure the concept of responsible consumption behavior in our questionnaire design have been comprehensively tested in previous studies. While it is beyond the scope of this research to include all possible ways in which responsible consumption behavior can be studied, we focus on the ones that repeatedly returned in past research. The strong backing by previous research in adjacent fields thus ensures content validity (Burns & Burns, 2008; Heale & Twycross, 2015; Saunders, Lewis & Thornhill, 2019).

Second, face validity is a method that takes the opinion of participants about the accuracy of an instrument used to measure a concept into account (Burns & Burns, 2008). In the given study, this refers to the idea of how consumers define responsible consumption behavior and if they agree with how our survey measured it. Due to time and resource restrictions, we only asked participants of our pre-test about to what extent they agree with our conceptualization of responsible consumption. This cannot be classified as a formal validation. Thus, we admit this as a limitation of our research.

The third type of validity is construct validity. Construct validity refers to the degree to which the measurement procedures related to the concept being studied. Again, this is safeguarded via the literature review that provides theoretical evidence that responsible consumption behavior in our survey is measured similarly to theoretical propositions of past studies (Burns & Burns, 2008; Heale & Twycross, 2015).

External validity involves the degree to which outcomes can be generalized (Burns & Burns, 2008; Easterby-Smith et al., 2018). External validity is separated into two types of validity – population validity and ecological validity (Burns & Burns, 2008). While population validity

questions how well the selected sample represents the larger population, ecological validity presents the degree to which conclusions can be translated to a different environmental context.

In our study, we used non-probability sampling. Non-probability sampling comes with some downsides, a major one being the possible deviation from population characteristics (Saunders, Lewis & Thornhill, 2019). This leads to a lessened population validity. Still, results of non-probability sampling can be valuable to guide future research that has more resources available to verify if findings can be transferred to the larger population (Burns & Burns, 2008). Apart from diversifying our primary survey distribution to different occupation, age, and other characteristic groups, we tried to account for randomization as well as possible by the automatic random distribution of the three different surveys to achieve external validity within this research. When it comes to ecological validity, it is worth mentioning that Sweden is often regarded as a point man for many, especially European, countries (Tamanini, 2016). Therefore, it is likely that findings indicate future developments in other countries as well. At the same time, cultural contexts have a huge influence on perceptions of responsible consumption behavior (Pitta, Fung & Isberg, 1999). More research should be conducted to improve external validity.

Another component defining a research's quality is reliability. Reliability refers to the internal consistency of measures, or in other words, the assurance that the research instrument provides approximately the same responses each time a test is completed (Burns & Burns, 2008). Heale & Twycross (2015) state that internal consistency can be assessed using item-to-total correlation, split-half reliability, Cronbach's α test, or Kuder- Richardson coefficient. Cronbach's α is the most frequently used test for studies with research instruments that have questions with two or more answers (Burns & Burns, 2008; Saunders, Lewis & Thornhill, 2019). It is therefore chosen in this study as a measure for reliability. The Cronbach's α test result is a number between 0 and 1. The closer this number gets to 1, the higher the reliability ensuring that several items measure the same variable (Malhotra, 2010). In our study reliability based on the Cronbach's α tests is sufficiently satisfied. The values are more closely interpreted in the analysis section under data preparation.

As with all research, perfect validity and reliability cannot be assured. Especially due to time and resource limitations, non-probability sampling lessens validity greatly. We still argue that findings are valuable indicators that can be advanced in future research.

4.4.2 Social Desirability Bias

Additionally, the threat of "social desirability bias" among respondents is likely to influence responses to our questionnaire since the research at hand looks at a sensitive topic. Social desirability discloses the tendency of respondents to answer a survey in a way that generates outcomes that are considered more socially acceptable (Easterby-Smith et al., 2018). The threat of the social desirability bias in self-reported responsible behavior studies is that answers tend to lean towards overly responsible consumption behavior (Jo, Nelson & Kiecker, 1997). Unfortunately, this error cannot be eliminated completely. However, there are ways to control and minimize its effects. In our survey, we guaranteed not only confidentiality but also anonymity before commencing the questionnaire. Through this, the tendency to respond in a favorable position with regards to social norms is lower because answers are not linked to the respondent him or herself (Easterby-Smith et al., 2018). Malhotra (2010) indicates that online surveys serve as an especially good tool when it comes to perceived anonymity. Following Jo's, Nelsen's, and Kiecker's (1997) research on controlling for social desirability bias within marketing research, we employed indirect questions in the survey. Instead of statements like "I consume more responsible when I am with my family", we therefore divided responsible consumption behavior into several sub-categories to ask for it more subtle. Again, Malhotra (2010) mentions that especially for internet surveys, social desirability is low in comparison to other survey methods. It is quite likely that there is a remaining degree on social desirability included in the data set. While this cannot be excluded completely, it is important to note that we used the resulting indices to compare them to each other instead of drawing conclusions based on the absolute numbers. Assuming that social desirability is equally present in all social environments, the effects of it can be neglected.

4.5 Limitations of Methodology

The methodological set up of our research is designed to help us answer the research question of "*How do different social environments influence responsible consumption behavior?*". While aiming to answer this question as well as possible, several limitations arose through choosing certain methods we do not want to conceal. The scope in time and resource availability to complete this thesis caused many of these limitations. Future research could expand on this

study to account for it. Other limitations are connected to the nature of the topic itself and are hard to eliminate by a single research study.

One limitation we want to acknowledge is the categorization of social environments. First of all, we chose only three groups to differentiate while various other reference groups could influence responsible consumption behavior. Furthermore, we did not explicitly define the groupings but left it to our participants to decide what they define as friends, family, or occupation-related relationships. Especially for the student respondents, it might also have been difficult to differentiate between friends and colleagues, meaning that answers might not differ significantly.

Another limitation that is already pointed out in the section on the sampling approach is the non-probability sampling. It was not possible for us to get a full list of our population and therefore we had to fall back on non-probability sampling. Selection bias is likely to be present. That means that because we had to rely on our limited network of the Swedish people, the representativeness of the population might be diminished (Malhotra, 2010). Future, larger positioned studies, might need to verify the findings of this study. Staying within the context of sampling, we initially planned to recruit participants for our survey not only through online channels but also to recruit participants on the streets and in supermarkets. However, with the ongoing COVID-19 conditions, we were restricted to distribute the web-based survey via online channels as approaching the sample population in person was not realizable. Consequently, to gather responses for the study the sampling population was approached mainly via social media groups on for example Facebook and LinkedIn. This specifies that the sample is based on individuals being active on social media and thus several members of the initial population have a zero-inclusion chance (Burns & Burns, 2008; Easterby-Smith et al., 2018). Therefore, it is not possible to determine the variance between the true mean of the sample and the true population, or, put differently, the sampling error. A consequence of this is that the results are not statistically generalizable to a larger population (Burns & Burns, 2008). Furthermore, because approaching the sample population in person was not realizable, we had no control over whether the survey was conducted independently from distractions or other situational variables. Accessory to this that it was also not possible to explain the purpose of the study in person, the instructions could be misunderstood by participants even though a test study has been conducted (Easterby-Smith et al., 2018).

Looking at our scaling procedure, we treated Likert scale data as interval data. As mentioned before, Likert scales, present only ordinal data which means that non-parametric measures should be used. As with a lot of business research, we still used parametric statistics, enclosing this problem by using our outcomes as indices. Further, we used Likert scale statements to measure self-reported consumption behaviors. Answers given are likely to be influenced, for example, due to social desirability and might not always perfectly mirror actual behaviors. Oftentimes, behavior is studied by ethnographic studies, observing individuals' real behavior. Therefore, our research is limited in the way that we assume self-reported behavior to reliably represent actual behavior. We argue that this is possible at least to the extent that deviations are similar for all environments which allows us to make comparisons. As mentioned earlier we are focusing on comparisons rather than on absolute values.

Overall, we are aware that our research entails some limitations. As master's degree students with limited time and resource budget, we do not claim our work to be perfectly flawless. By honestly disclosing them we hope to encourage future research to extend on our findings, make them more reliable, and more generalizable.

5 Analysis

This chapter discusses the analysis of the gathered data. The deductive nature of this research and the previously explained research design provide guidance for our data analysis. In the first step, the data processing, we explain how the data was screened and prepared for the final analysis. The section on descriptive statistics serves as an introduction for a better understanding of the data at hand. In a second step, the data analysis, this chapter explains how the prepared data is used to conduct different statistical analyses that eventually help to understand and interpret the data in accordance with the research purpose. The data analysis is divided into two parts, first looking at the general influence of social environments on responsible consumption behavior and then taking into account the moderating variable of age. Parametric analysis tools are used.

5.1 Data Processing

Before running statistical tests and starting the actual data analysis, we prepared the dataset accordingly. First of all, we scanned the data and looked for any noticeable abnormalities. We further eliminated all non-valid cases and ensured a neat dataset with correct coding. Moreover, we grouped together questions for single variables and conducted Cronbach's α test to ensure inter-item correlations. Descriptive statistics of the clean data set then served as a basis to get an overview of the data at hand.

5.1.1 Data Screening

Within the time period from the 11th of April to the 25th of April, we collected a total of 410 complete responses through *SoSci Survey*. To ensure working with appropriate data, we simply excluded incomplete surveys from the data set even before downloading it. Further, as a first step, we screened responses, eliminating all those cases that did not match the defined sampling group criteria. Here the emphasis laid on the moderating variable. More specifically, we removed the respondents not fitting the age category of generation X, Y, or Z, respondents below 18 years old or older than 65, from the data set. Besides, as identified in the literature review, nationality is a significant influence on consumer behavior. Therefore, we did not collected data

from non-Swedish citizens. Still, *SoSci Survey* counted these respondents as completed cases, meaning that we had to exclude them from the dataset. Eventually, this led to 410 valid cases to analyze for this study.

5.1.2 Data Preparation

To run appropriate analyses, we further prepared the data. As indicated in the chapter on the pre-test, our Likert-scale statements could be answered not only from (1) very strongly disagree to (7) very strongly agree, but also with (8) N/A, which stands for not applicable. Without any further adjustments, outcomes would be largely influenced by this, since values of 8 would pull up the averages. Taking this into account, we replaced every value of 8 with the average of the values of the other statements for the same variable. For the rare case that all statements for a variable were answered with N/A (6 cases), we coded N/A for missing data meaning that the variable for this participant did not get included in the overall average. Additionally, we eliminated 11 cases from the data set where respondents used the same answer for every question as well and 4 additional cases that showed a competition time of under 30 seconds for the Likert scale page of the questionnaire indicating that people did not take the time to actually read through the statements.

We also collected exact the ages from all participants. For the purpose of our study, we only need to differentiate between two age groups. Therefore, before running the analyses, we grouped responses into the two predefined age groups we want to use for our study. All people aged between 18 and 34 were grouped in one age group, coded as 0, while all respondents aged 35 and older were grouped into a second age group which was coded by as 1. The coding was also changed for gender. While *SoSci Survey* used a coding of (1) male and (2) female, Burns & Burns (2008) recommend working with the more common coding of (0) male and (1) female.

Further, we computed grouping variables allowing us to combine values from a multi-item scale into single variables that represent overriding factors that are used to run analyses. To differentiate between the variables of recycling, eco-friendly food consumption, transportation choice, and sustainable fashion consumption, we allocated the corresponding statements to the variables and calculated average values for each of the four grouping variables. We accumulated answers to form an index representing the variables. As mentioned earlier, three statements measured each variable. We thus condensed the total of twelve statements to four variables.

The section on the questionnaire design gives explanations for the reasons why we chose certain statements for the corresponding variable. Further, we also created the overall variable for "responsible consumption" to summarize the behaviors of recycling, eco-friendly food consumption, transportation choice, and sustainable fashion consumption all under one overarching variable.

Besides looking at the literature to see how other researches have classified similar concepts, we ensure the internal consistency by conducting Cronbach's α tests to see if the items used to measure each variable are suitable. We summarized the results in appendix B.

As explained before, Cronbach's α coefficients vary between 0 and 1, and the higher the score is, the higher the reliability ensuring that several items measure the same variable (Malhotra, 2010). According to Malhotra (2010), an acceptable reliability score is one that is 0.6 or higher. We conducted Cronbach's α tests for the groupings explained above to check for the inter-item-correlations. For the sake of the Cronbach's test, we grouped statements per social environment together resulting in scores for the different variables in each environment. The outcomes show that most values fulfill if not even exceed this cutoff point by far with coefficient values somewhere between 0.7 and 0.9. Only one variable, fashion within the social environment of friends, with a value of 0.587 has a value slightly below the recommended acceptance level. The item-total statistics for this test indicate that a value of 0.774 could be reached if the question about the need to wear new clothes would be excluded. As this is not the case for other social environments and we wanted to have consistency in our measurements we did not exclude this item. Considering this, we accept the α value slightly lower than 0.6.

These values prove not only that the Likert scale statements used appropriately measure the underlying variables, but it also shows that recycling, eco-friendly food consumption, transportation choice, and sustainable fashion consumption are appropriate variables to measure responsible consumption behavior.

5.1.3 Descriptive Statistics

Once the data set was neat and tidy, we first looked at the descriptive statistics to get an overview of the gathered data. According to Burns and Burn "[s]ummarization by descriptive statistics is the major form of analysis for numerical data" (2008, p.99).

The total sample of valid responses has a size of n = 410. In the first instance, we checked for the distribution of the three variations of the survey. *Table 5.1* shows that the randomization worked quite well, resulting in an approximately equal distribution. With 132, 144, and 134 responses for friends, family, and occupation respectively, each social environment accounts for roughly one third.

Table 5.1: Questionnaire Distribution

	Frequency	Percent	Cumulative Percent
Friends	132	32.2	32.2
Family	144	35.1	67.3
Occupation	134	32.7	100
Total (N)	410	100	100

With 244 responses, males account for 59.5% of the sample, while 164 female responses account for 40.0%. Only two persons (0.5%) indicated that they did not want to state the gender, and no one selected the option of "other". Looking at the exact age, the sample overall shows a mean age of 34.64. Within the group aged 18 to 34 it is 25.53 years, and within the group aged older than 35, the mean age is 46.18 years. The sample exhibits a slight bulking towards the younger age group. With 229 people aged between 18 and 35, 55.9% of the sample fall within the young age group. 44.1%, accounting for 181 participants, fall within the group of people ages 35 or older. 46.3. *Table 5.2* gives an overview of these frequency statistics.

Table 5.2: Gender and Age Distribution

	Frequency	Percent	Cumulative Percent
Male	244	59.5	59.5
Female	164	40	99.5
Other	0	0	99.5
Prefer not to say	2	0.5	100
18-34	229	55.9	55.9
35 and above	181	44.1	100

While aiming for an approximately even distribution, especially between age-groups, it is not surprising, that our sample includes more younger people. A major reason for this is the use of an online survey only. As common knowledge indicates, younger people are more tech-savvy

and thus they are easier to reach online than the elderly population. Unfortunately, we had to drop our initial strategy to approach elderly respondents on the streets and in supermarkets due to the Covid-19 pandemic. Instead, we tried to distribute the survey in suitable Facebook and LinkedIn groups and used our limited network of personal contacts to make up for this. Overall, we are satisfied with the age distribution. For gender we did not specifically pay attention to generate even samples. Randomization resulted in a majority of male responses. Since gender in our research does not gain special attention, we tolerate this uneven distribution.

SPSS also allowed us to get a first overview of the mean values. Table 5.3 provides the different mean values with their corresponding standard deviations. Conspicuously, most of the extremes of means lie within the family surrounding. Without considering the different age groups, mean values vary from 3.157, for the variable of sustainable fashion choice in the family group, to 4.338 for the recycling variable also in the family group. For the age group between 18 and 35, the lowest mean value is 2.542 for fashion within the social environment of family and the highest mean is 3.892 for recycling also in the family surrounding. The older age group has its lowest mean at eco-friendly food consumption when being with friends with a mean value of 2.470. The highest value in this age group is 4.995 for eco- friendly food consumption with one's family. The standard deviations vary from 0.82 to 2.116 with an average of 1.279. This means that the dispersion of answers cluster around the mean, generally only varying by 1.279 (Burns & Burns, 2008).

Without any further analysis, the largest discrepancies between the age groups lie within the family environment. With mean differences of 1.5 and 1.45, eco-friendly food consumption and sustainable fashion choices account for the largest differences respectively. In both areas, family shows a way larger effect on eco-friendly food consumption of elderly people than on younger people. The mean difference in the overall responsible consumption reflects this accordingly with a difference of 1.27. For a sounder argumentation, we went deeper into the analysis of means, looking more specifically at where to find significant mean differences.

Table 5.3: Categorized Means

Variable	Social Environment	Overall		18-34		35+	
		Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Overal Responsible Consumption	Overall	3.432	1.165	3.295	1.091	3.609	1.236
	Friends	3.304	1.171	3.462	1.363	3.095	0.820
	Overall	3.697	1.083	3.159	0.877	4.429	0.894
	Occupation	3.269	1.204	3.280	0.987	3.256	1.431
Recycling	Overall	3.617	1.383	3.550	1.256	3.704	1.531
	Friends	3.241	1.195	3.297	1.328	3.167	1.000
	Family	4.338	1.410	3.892	1.293	4.945	1.342
	Occupation	3.202	1.203	3.417	1.047	2.944	1.331
Food	Overall	3.552	1.523	3.527	1.433	3.584	1.637
	Friends	3.197	1.634	3.748	1.829	2.470	0.937
	Family	4.132	1.379	3.498	1.131	4.995	1.213
	Occupation	3.268	1.376	3.333	1.259	3.189	1.511
Transportation	Overall	3.294	1.427	3.090	1.317	3.554	1.519
	Friends	3.274	1.275	3.333	1.438	3.196	1.027
	Family	3.190	1.242	2.745	1.156	3.781	1.105
	Occupation	3.428	1.728	3.233	1.292	3.656	2.116
Fashion	Overall	3.277	1.366	3.026	1.327	3.606	1.350
	Friends	3.516	1.414	3.468	1.512	3.580	1.277
	Family	3.157	1.274	2.542	0.994	3.995	1.131
	Occupation	3.177	1.396	3.130	1.293	3.233	1.519

5.2 Data Analysis

Moving on from the descriptive statistics, we proceeded to inferential statistics which are concerned with estimating, testing, and analyzing (Burns & Burns, 2008). In general, ordinal data, such as from a Likert scale should not be used to draw conclusions about absolute distances between the scale points; at least interval data is needed (Burns & Burns, 2008). This implies that non-parametric analysis tools should be used. As with a lot of business research, we still used parametric statistics, enclosing this problem by using our outcomes as indices. In the following, we first explain which tools we used for our analysis. The actual analysis then looks at the general impact of social environments on responsible consumption first, before incorporating age.

5.2.1 Analysis Tools Used

Our analysis is largely based on comparing means between different observations. Within research statistics, there are different tools to do this. While t-tests are a helpful tool when comparing differences between only two groups, an analysis of variance (ANOVA) allows us to easily analyze mean differences between several groups (Burns & Burns, 2008). We, therefore, decided to use ANOVA for our analyses.

By definition, ANOVA is a "hypothesis testing procedure used to determine if mean differences exist for two or more samples or treatments" (Burns & Burns, 2008, p.297). In simple terms, ANOVA compares two different variances, between- and within-group variance, to determine if mean differences occur by chance or due to differences in treatments. The value obtained is the F ratio which tells if the variations between certain groups are different from variations within these groups (Burns & Burns, 2008). Significance levels of this F ratio can then be used to draw conclusions about the difference in group means (Burns & Burns, 2008). Three basic assumptions always need to be kept in mind when working with ANOVA. Namely, these are normality, homogeneity of variance, and independence of errors.

Within the family of ANOVA, there are different variations. The between-group one-way ANOVA, for example, measures the effect of only one independent variable on the dependent variable; it compares different means on different samples (Burns & Burns, 2008). A repeated-measures ANOVA on the other hand analyzes repeated measures of the same sample over time

(Burns & Burns, 2008). When aiming to evaluate the effects of two independent variables, as well as their interaction effect, a factorial ANOVA provides remedy (Burns & Burns, 2008). ANOVA tables also give information about the effect size, partial eta². The effect size is a measurement of the power of analysis; it tells how much of the variation in the dependent variable can be explained by the independent variable (Burns & Burns, 2008). Cohen (2007) introduced benchmarks to classify small medium and large effect sizes. For ANOVA, he claimed 0.1, 0.25, and 0.4 to be small, medium, and large effect sizes respectively.

Based on the f-statistic, an ANOVA only indicates whether there is at least one difference in means or not, but it does not provide any indication on how many significant differences there are where these differences lie (Burns & Burns, 2008). A multi-comparison analysis like a Post Hoc test gives further information about this (Burns & Burns, 2008). To decide which Post Hoc test to use it is important to look at the variances. For equal variances, the Bonferroni or Tukey is most suitable, while Bonferroni is best when only comparing few means, and different variances the Games-Howell or Dunnett is advisable (Burns & Burns, 2008). For our research, we use the Tukey Post Hoc test.

In statistics, everything is about correctly rejecting or accepting null hypotheses. There are two major errors, type I and type II error, that can occur (Burns & Burns, 2008). While type I errors are concerned with rejecting a true null hypothesis, type II errors look at the probability of accepting a false null hypothesis. Every study, therefore, needs to consider how much error it allows. The most common level of error is 5% which correlates to an alpha of 0.05; other commonly used alpha values are 0.01 or 0.1 where the latter is used when there are less strict rules for rejecting a correct null hypothesis (Cohen, 2007). Burns and Burns explain the meaning of an alpha error of 0.05 by stating that if a "study were to be conducted 100 times, we would expect significant results in 95 studies, and non-significant results in 5 studies" (2008, p.239). Our study incorporates this common significance level of $\alpha = 0.05$.

The following parts look at our hypotheses and their corresponding analyses separately. We start with our first hypothesis which claims that there is a significant mean difference in individuals' responsible consumption behavior in different social environments. From that, we move on to the second set of hypotheses that incorporate age as a moderating variable.

5.2.2 Analysis on H_1

Our first research hypothesis states:

> **H_1:** There is a significant mean difference in individuals' responsible consumption behavior in different social environments.

Statistically, this means that there is at least one inequality of means. We used a simple one-way ANOVA to test for the veracity of this hypothesis. Our single independent variable is the social environment which splits into the three categories of friends, family, and occupation. For the dependent variable, we first looked at the overall responsible consumption behavior. In the second step, we also considered recycling, eco-friendly food consumption, transportation choice, and sustainable fashion consumption individually. This means that we split our H_1 into several sub-hypotheses as can be seen in Figure 3.4. At first, we analyzed the differences between the three social environments in the overall responsible consumption behavior. In the next step, we ran similar analyses for each of these specific responsible consumption behaviors to investigate if there are more significant differences in some areas of sustainable consumption than in others. The structure of the analysis follows the same steps for each of these variables. First, we ran a one-way ANOVA to find out whether there are significant mean differences between the different social environments. To investigate where exactly these differences lie, we continued with a Tukey Post Hoc analysis since equal variances are assumed.

When analyzing the results, it is important to consider the assumption of ANOVA. Before jumping into the ANOVA, we thus checked the assumptions of normality, heterogeneity of variances, and independence of errors for each set of analyses. We did so by using the Levene's test of homogeneity of variances, the Shapiro-Wilk normality test, and the Q-Q Plot showing us the residuals. These tests are very sensitive to deviations from perfect conditions. At this point, we want to concede that the outcomes of these tests were not always fulfilling the assumptions of ANOVA. We still decided to proceed with the parametric analyses to keep consistency throughout the thesis. The Likert scale measurement already is accounted for by serving as an approximation. Thus, we strongly argue that parametric analyses can be used. While we do not report on the outcomes of the assumption check for every run of analyses in detail, the corresponding test outputs are available in appendix C.

Overall Responsible Consumption Behavior

> **H₁:** There is a significant mean difference in individuals' **overall responsible consumption** behavior in different social environments.

Starting with the overall responsible consumption behavior, we ran an ANOVA to investigate the differences in overall responsible consumption behavior between social environments. Table 5.4 depicts the ANOVA table. The results of the ANOVA show that the effect of social environments on overall responsible consumption behavior is significant (F (2,403) = 5.93, p = 0.003). Hence, we reject the null hypothesis and accept the alternative hypothesis which states that there is indeed at least one difference in means between the social environments tested. With an effect size of only 0.029, it is however not very strong since less than 3% of the variation in overall responsible consumption can be explained by the social environments.

Table 5.4: One-Way ANOVA Overall Responsible Consumption

	Sum of Squares	df	Mean Square	F	p	$\eta^2 p$
Social Environment	15.7	2	7.86	5.93	0.003	0.029
Residuals	534.4	403	1.33			

Next, we ran a Tukey Post Hoc test to find out where exactly the differences between the different social environments lie. Table 5.5 shows the results of the Post Hoc test. Even though the ANOVA indicates that there are significant differences between some of the groups, the Post Hoc test points out that the means for friends and occupation do not differ significantly (p = 0.968). Still, both differ significantly from the mean of family [Friends – Family (p = 0.014); Family – Occupation (p = 0.006)].

Table 5.5: Post Hoc Test Overall Responsible Consumption

Comparison			Mean Difference	SE	df	t	p_{tukey}
Social Environment		Social Environment					
Friends	-	Family	-0.3929	0.139	403	-2.820	0.014
	-	Occupation	0.0347	0.142	403	0.244	0.968
Family	-	Occupation	0.4276	0.139	403	3.082	0.006

The analysis of estimated marginal means further supports this analysis. As seen in Table 5.6, the means for friends ($\mu = 3.30$) and occupation ($\mu = 3.27$) are very close to each other while the family mean ($\mu = 3.70$) deviates more. This is mirrored by the absence of overlap in the 95% confidence intervals between neither friend (3.11-3.50) nor occupation (3.07-3.47) with family (3.51-3.89). Only friends and occupation largely overlap meaning that means are very similar. Figure 5.1 further shows a graphical visualization of this.

Table 5.6: Estimated Marginal Means Table Overall Responsible Consumption

			95% Confidence Interval	
Social Environment	**Mean**	**SE**	**Lower**	**Upper**
Friends	3.30	0.1010	3.11	3.50
Family	3.70	0.0960	3.51	3.89
Occupation	3.27	0.1002	3.07	3.47
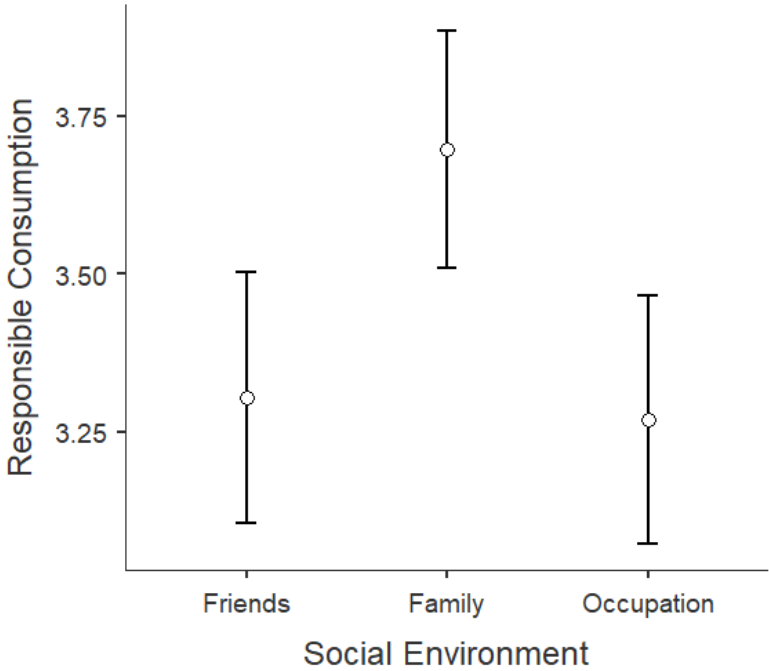
Figure 5.1: Estimated Marginal Means Plot Overall Responsible Consumption

Hence, based on the ANOVA, the accompanied Post Hoc test, and the analysis of marginal means, we conclude that for overall responsible consumption the family mean significantly differs from the means of friends and occupation while these two groups among themselves are equivalent. This means that we accept H_1 stating that there is a significant mean difference in individuals' overall responsible consumption behavior in different social environments.

Recycling

> **H₁ₐ:** There is a significant mean difference in individuals' **recycling** behavior in different social environments.

Next, we checked the influences of different social environments on recycling behavior. Table 5.7 shows the ANOVA table. It indicates that the effect of social environments on recycling behavior is significant ($F_{(2,403)} = 35.5$, $p < 0.001$). For this reason, we reject the null hypothesis of equality of means. The means of the three different social environments are not all equivalent. The effect size indicates that around 15% of the variation of recycling behavior can be explained by the variation in social environments. Based on Cohen's (2007) classification this leans more towards the medium effect size than the effect of overall responsible consumption.

Table 5.7: One-Way ANOVA Recycling Behavior

	Sum of Squares	df	Mean Square	F	p	η²p
Social Environment	116	2	57.98	35.5	< .001	0.150
Residuals	658	403	1.63			

Following the ANOVA, we ran a Post Hoc test. The results are presented in **Error! Reference source not found.**. The test shows significant mean differences between the groups of family and friends and between family and occupation but not between friends and occupation. Therefore, only family significantly differs from both of the other groups but the groups of friends and occupation show equivalence in means.

Table 5.8: Post Hoc Test Recycling Behavior

Comparison						
Social Environment	Social Environment	Mean Difference	SE	df	t	p_tukey
Friends	- Family	-1.0969	0.155	403	-7.094	< .001
	- Occupation	0.0390	0.158	403	0.247	0.967
Family	- Occupation	1.1359	0.154	403	7.376	< .001

Again, we continued with the estimated marginal means to support our analysis. Table 5.9 presents the means and 95% confidence intervals for the recycling behavior means of the three different social environments. The means for friends ($\mu = 3.24$) and occupation ($\mu = 3.20$) are again very similar. At the same time, the family mean ($\mu = 4.34$) is way higher. Looking at the overlap in confidence intervals, lower and upper margins of the confidence intervals for friends (3.02-3.46) and occupation (2.98-3.42) are also very similar, indicating a large overlap and therefore equivalent means. Only the margins for the family group (4.13-4.55) are substantially higher with no overlaps with any of the other groups. These numbers are further visually exemplified in Figure 5.2 where the estimated marginal family mean shows a large distance to the other groups.

Table 5.9: Estimated Marginal Means Table Recycling Behavior

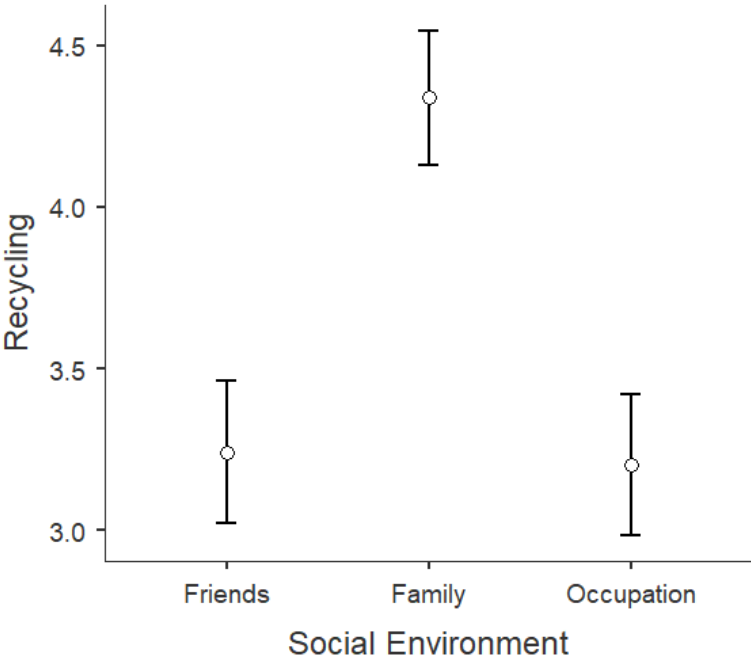|			95% Confidence Interval	
Social Environment	**Mean**	**SE**	**Lower**	**Upper**
Friends	3.24	0.112	3.02	3.46
Family	4.34	0.107	4.13	4.55
Occupation	3.20	0.111	2.98	3.42

Figure 5.2: Estimated Marginal Means Plot Recycling Behavior

Based on the preceding analysis, we conclude that for the recycling the family mean significantly differs from the means of friends and occupation while these two groups among themselves do not show inequality of means. Based on this, we accept H_{1a} stating that there is a significant mean difference in individuals' recycling behavior in different social environments.

Eco-friendly Food Consumption

> **H₁ᵦ:**   There is a significant mean difference in individuals' eco-friendly **food** consumption behavior in different social environments.

Our second sub-hypothesis looks at eco-friendly food consumption as a category or responsible consumption behavior. Table 5.10 shows the corresponding ANOVA table. The significant F value indicates that social environments have a significant influence on eco-friendly food consumption ($F_{(2,403)} = 17.6$, $p < 0.001$). Therefore, we reject the null hypothesis of equality of means and accept the alternative hypothesis stating that there is at least one difference in means between the three different social environments we tested. The effect size for this variation again is quite low at 8%.

Table 5.10: One-Way ANOVA Eco-Friendly Food Consumption

	Sum of Squares	df	Mean Square	F	p	$\eta^2 p$
Social Environment	75.4	2	37.72	17.6	< .001	0.080
Residuals	864.4	403	2.14			

Next, we ran the Post Hoc test looking at eco-friendly food consumption to find out where exactly these differences lie. Table 5.11 summarized the outcomes of the test. Similar to the results for overall responsible consumption behavior and recycling behavior, the Post Hoc test points out that the means for friends and occupation do not differ significantly, but both differ significantly from the mean of family.

Table 5.11: Post Hoc Test Eco-Friendly Food Consumption

Comparison			Mean Difference	SE	df	t	p_{tukey}
Social Environment		Social Environment					
Friends	-	Family	-0.9345	0.177	403	-5.274	< .001
	-	Occupation	-0.0702	0.181	403	-0.388	0.920
Family	-	Occupation	0.8643	0.176	403	4.897	< .001

The 95% confidence intervals indicate the same results. As indicated in Table 5.12, there is no overlap between the intervals of friends (2.94-3.45) and family (3.89-4.37) or occupation (3.02-3.52) and family. In fact, there is only an overlap for friends and occupation indicating a similarity of means. The exact mean numbers indicate the same. While friends ($\mu = 3.20$) and occupation ($\mu = 3.27$) means only deviate slightly, the family ($\mu = 4.13$) mean is considerably higher. This is also graphically shown in Figure 5.3.

Table 5.12: Estimated Marginal Means Table Eco-Friendly Food Consumption

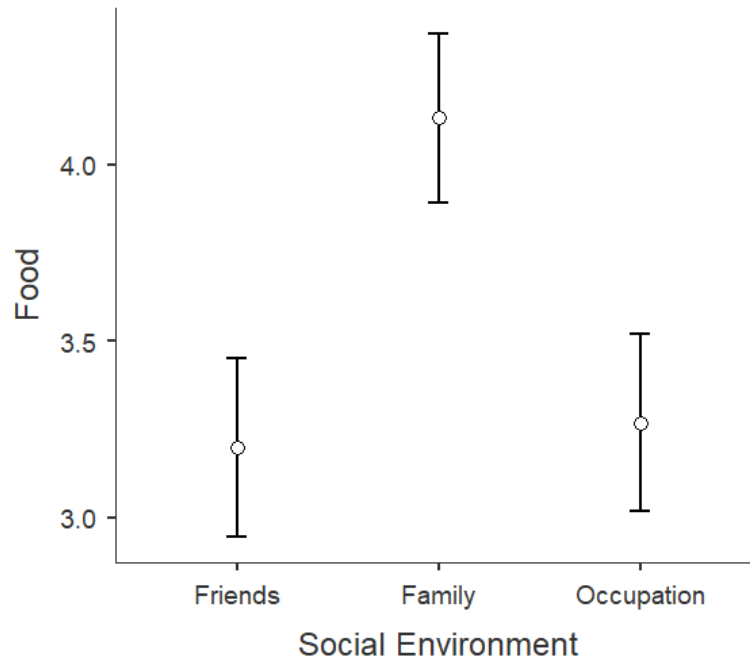| Social Environment	Mean	SE	95% Confidence Interval	
			Lower	Upper
Friends	3.20	0.128	2.94	3.45
Family	4.13	0.122	3.89	4.37
Occupation	3.27	0.127	3.02	3.52

Figure 5.3: Estimated Marginal Means Plot Eco-Friendly Food Consumption

Looking at the conducted ANOVA, the Post Hoc test, and the analysis of marginal means, we conclude that eco-friendly food consumption means for the family significantly differs from the means of friends and occupation. Between the groups of friends and occupation, there is no such difference. Therefore, we accept H_{1b} stating that there is a significant mean difference in individuals' eco-friendly food consumption behavior in different social environments.

Transportation choice

> **H_{1c}:** There is a significant mean difference in individuals' **transportation** choice behavior in different social environments.

Next, we looked at the dimension of transportation choice. Again, we started with a simple one-way ANOVA to find out if there are any differences between the means of the different social environments. Table 5.13 shows the ANOVA table for transportation choice. The results indicate there are no significant differences ($F_{(2,399)} = 0.964$, $p = 0.382$). Given these results, we accept the null hypothesis of equality of means. There are significant differences between the transportation choice means for the three different social environments under test. The effect size of 0.5% is very low.

Table 5.13: One-Way ANOVA Transportation Choice

	Sum of Squares	df	Mean Square	F	p	η²p
Social Environment	3.92	2	1.96	0.964	0.382	0.005
Residuals	812.19	399	2.04			

Since the ANOVA already shows that there are no significant mean differences, we did not conduct a Post Hoc analysis at this point. Still, we looked at the estimated marginal means to confirm our findings. Table 5.14 and Figure 5.4 support the absence of significant mean differences since the intervals for all three social environments overlap which the graphic visualization also shows. All three means for friends ($\mu = 3.27$), family ($\mu = 3.19$), and occupation ($\mu = 3.43$) are very close to each other and so are their confidence interval overlaps [friends (3.03-3.52); family (2.95-3.43); occupation (3.18-3.67)].

Table 5.14: Estimated Marginal Means Table Transportation Choice

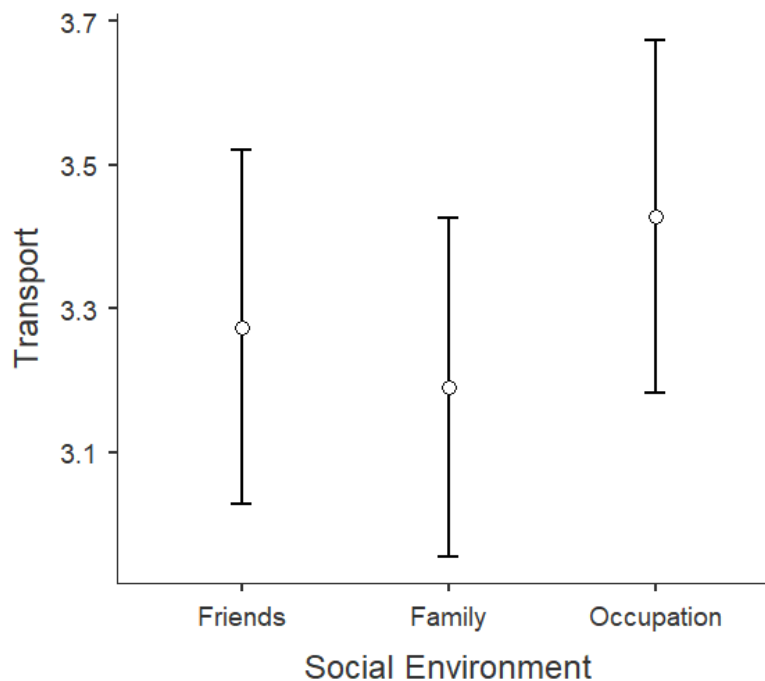| Social Environment	Mean	SE	Lower	Upper
Friends	3.27	0.125	3.03	3.52
Family	3.19	0.120	2.95	3.43
Occupation	3.43	0.125	3.18	3.67

Figure 5.4: Estimated Marginal Means Plot Transportation Choice

Based on our analysis, we conclude that there are no significant mean differences between social environments when it comes to transportation choice. All means are statistically equivalent. Accordingly, we reject H_{1c} stating that there is a significant mean difference in individuals' transportation choice behavior in different social environments.

Sustainable Fashion Consumption

> **H_{1d}:** There is a significant mean difference in individuals' sustainable **fashion** consumption behavior in different social environments.

The last dimension we analyzed is sustainable fashion consumption. Table 5.15 shows that at our chosen alpha level of 0.05 there is no significant mean difference in sustainable fashion consumption between social environments (F $(2,401)$ = 2.89, p = 0.057). However, looking at the visualization of the marginal mean differences in Figure 5.5, we observe that the mean for friends is higher. The most common significant level used in consumer behavior research is 0.05 (Saunders, Lewis & Thornhill, 2019). Still, there is no clear cut-off when it comes to significance levels. Burns and Burns (2008), for example, suggest three different acceptable levels one could use, namely, 0.1, 0.05, and 0.01. While sticking to 0.05 for our research, we want to acknowledge that for fashion, means are significantly different at a significance level with an alpha of 0.1. Therefore, we reject the null hypothesis of equality of means between the three tested social environments at 0.05 but recognize significance at the level of 0.1. The size for this effect is indicated by the partial eta² of 0.014 which translates into 1.4%.

Table 5.15: One-Way ANOVA Sustainable Fashion Consumption

	Sum of Squares	df	Mean Square	F	p	η²p
Social Environment	10.7	2	5.34	2.89	0.057	0.014
Residuals	741.1	401	1.85			

We continued with the Post Hoc test as the ANOVA indicated significant mean differences at the alpha level of 0.1. Table 5.16 summarizes the outcomes of the test. Parallel to the results for overall responsible consumption behavior, recycling behavior, and eco-friendly food consumption, the Post Hoc test points out that the means for friends and occupation do not differ

significantly. However, we do detect significant mean differences for sustainable fashion be-tween the environment of friends and family (p = 0.078).

Table 5.16: Post Hoc Test Sustainable Fashion Consumption

Comparison			Mean Differ-ence	SE	df	t	p_{tukey}
Social Environ-ment		Social Envi-ronment					
Friends	-	Family	0.3582	0.165	401	2.169	0.078
	-	Occupation	0.3389	0.169	401	2.009	0.111
Family	-	Occupation	-0.0194	0.164	401	-0.118	0.992

Looking at the analysis of estimated marginal means, the results are not as distinct as they were for transportation choice. Table 5.17 shows that this time the means for family (μ = 3.16) and occupation (μ = 3.18) are very close to each other while the friends mean (μ = 3.52) differs more substantially. The 95% confidence intervals show that all means overlap to some extent. But while the lower and upper margins for family (2.93-3.38) and occupation (2.94-3.41) means are very similar, the friends margins (3.28-3.75) only overlap slightly with the two other groups. This is also visualized in Figure 5.5.

Table 5.17: Estimated Marginal Means Table Sustainable Fashion Consumption

Social Environment	Mean	SE	95% Confidence Interval	
			Lower	Upper
Friends	3.52	0.120	3.28	3.75
Family	3.16	0.113	2.93	3.38
Occupation	3.18	0.118	2.94	3.41
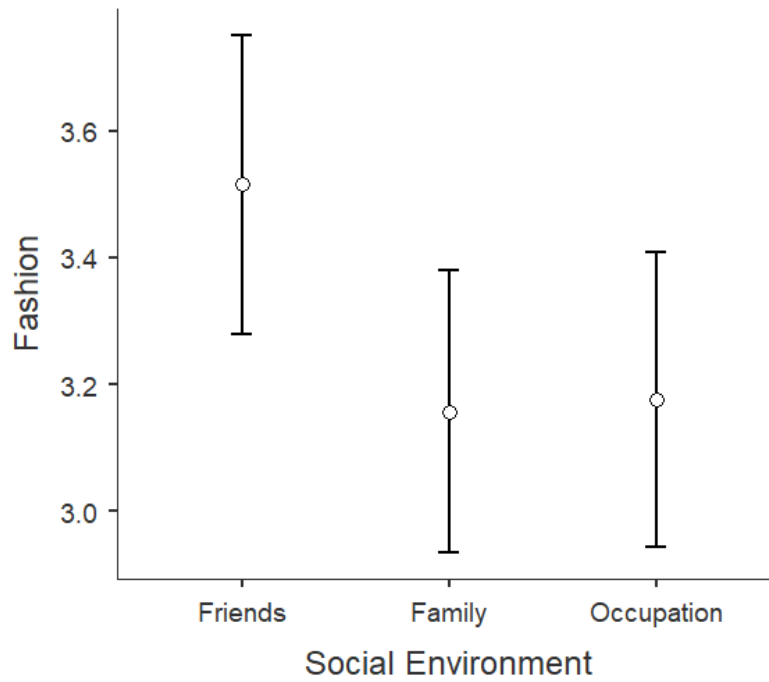
Figure 5.5: Estimated Marginal Means Plot Sustainable Fashion Consumption

Considering the outcomes of the ANOVA, and the analysis of marginal means, we conclude that for sustainable fashion consumption the means between the social environments of friends and family are significantly different. Thus, we accept H_{1d} stating that there is a significant mean difference in individuals' sustainable fashion consumption behavior in different social environments. Table 5.18 gives a summary of the rejected and accepted hypotheses. It also shows where the significant differences exist.

Table 5.18: Hypothesis 1 Summary

Hypothesis 1	Reject / Accept	Significant differences between social environment
H1: There is a significant mean difference in individuals' **overall responsible consumption** behavior in different social environments.	Accept	Family and friends Family and occupation
H1a: There is a significant mean difference in individuals' **recycling** behavior in different social environments.	Accept	Family and friends Family and occupation
H1b: There is a significant mean difference in individuals' eco-friendly **food** consumption behavior in different social environments	Accept	Family and friends Family and occupation
H1c: There is a significant mean difference in individuals' **transportation** choice behavior in different social environments.	Reject	/
H1d: There is a significant mean difference in individuals' sustainable **fashion** consumption behavior in different social environments.	Accept	Family and friends

5.2.3 Analysis on H_2, H_3, and H_4

The second part of our analysis comes in a set of three hypotheses.

> **H2:** Age has a significant influence on the effect of social environments on responsible consumption behavior.

> **H3:** For people aged between 18 and 34 friends have the highest influence on responsible consumption behavior.

> **H4:** For people aged between 35 and 65, family has the highest influence on responsible consumption behavior.

The second hypothesis aims to examine whether age is a significant moderating variable when it comes to the relationship between responsible consumption and social environments. In other words, this means that the level of responsible consumption behavior in social environments is influenced by the age of the respondent. We even go a step further and say that for people aged

between 18 and 34, friends have the highest influence on responsible consumption behavior (H_3) and for people aged between 35 and 65, family has the highest influence on responsible consumption behavior (H_4).

To test our hypotheses, we performed several factorial ANOVAs, which are discussed in the subsequent chapter. In factorial ANOVA, we can test a null hypothesis for each of the independent variables' social environments and age groups (main effects), and also one for their interaction (interaction effect). An interaction occurs when the effect of one independent variable on the dependent variable is not the same under all the conditions of the other independent variable. Since the between treatments variability in factorial ANOVA is split between the two factors and the interaction, there are three distinct hypotheses. One of them, the main effect on social environments, has already been addressed in the analysis on H_1. Further, the second main effect, the effect of age on responsible consumption, is not of concern for our analysis. We are mostly interested in the interaction effect of social environments and gender. The corresponding statistical hypothesis is formulated as follows:

> **H2:** There is a significant interaction effect between age groups and social environments when it comes to responsible consumption behavior.

Again, we started our analysis looking at the overall responsible consumption. Then, we considered recycling, eco-friendly food consumption, transportation choice, and sustainable fashion consumption individually as previously shown in Figure 3.6. H_3 and H_4 accordingly accompany each of the analyses. For analysis, we first ran a factorial ANOVA for each variable and continued with a Post Hoc test to investigate where exactly mean differences occur.

We also checked the assumptions of ANOVA for each of the analyses runs. We checked for the same assumptions as for H_1 which means that we conducted a Levene's test of homogeneity of variances, the Shapiro-Wilk normality test, and the Q-Q Plot showing us the residuals. Again, we concede that the outcomes of these tests were not always fulfilling the assumptions of ANOVA, but we still continued with parametric analysis tools. The outcomes of the assumption check can be found in appendix D.

Overall Responsible Consumption Behavior

H₂: There is a significant interaction effect between age groups and social environments when it comes to **overall responsible consumption** behavior.

H₃: For people aged between 18 and 34 friends have the highest influence on **overall responsible consumption** behavior.

H₄: For people aged between 35 and 65, family has the highest influence on **overall responsible consumption** behavior.

Table 5.19 portrays the factorial ANOVA table for overall responsible consumption behavior. The tests of between-subjects' effects show a significant effect for the age group and social environments on overall responsible consumption [Age group $(F_{(1,400)} = 7.22, p = 0.007)$; Social environment $(F_{(2,400)} = 10.43, p = < 0.001)$]. Therefore, we reject the null hypotheses for the main effects, and accept the alternative hypotheses, stating that there are significant mean differences in overall responsible consumption between age groups and between social environments. Besides being able to test a null hypothesis for each of the independent variables, factorial ANOVA enables us to test the independent variables for their interaction which is especially interesting for us. Looking at Table 5.19, the outcomes indicate that the interaction effect between the group and social environment is statistically significant $(F_{(2,400)} = 21.41, p < 0.001)$. This means that we reject the associated null hypothesis for H_2 and accept the alternative stating that there is a statistically significant interaction between age and social environments. The effect size, with roughly 10% is still small but not neglectable.

Table 5.19: Factorial ANOVA Overall Responsible Consumption

	Sum of Squares	df	Mean Square	F	p	$\eta^2 p$
Social Environment	24.69	2	12.35	10.43	< .001	0.050
Age Group	8.55	1	8.55	7.22	0.007	0.018
Social Environment ✳ Age Group	50.67	2	25.33	21.41	< .001	0.097
Residuals	473.37	400	1.18			

Moving on, the Post Hoc paired t-test between age groups and all social environments implies where the significant mean differences lie. Table 5.20 shows the result. The outcomes suggest that there are highly significant mean differences between the age group 18-34 and age group 35+ in responsible consumption behavior when comparing the environment of family ($p < 0.001$). Controversially, there are no significant mean differences between age group 18-34 and age group 35+ responsible consumption behavior in the environment of friends ($p = 0.931$) or occupation ($p = 1.000$). Regarding the within-group differences for the age group 18-34, there are no significant mean differences in responsible consumption between the social environments of friends and occupation ($p = 0.916$), friends and family ($p = 0.504$), or occupation and family ($p = 0.982$). For the age group 35+ there are significant mean differences in overall responsible consumption between the social environments of occupation and family ($p < 0.001$) and friends and family ($p < 0.001$).

Table 5.20: Post Hoc Test Overall Responsible Consumption Interaction

Comparison								
Social Environment	Age Group		Social Environment	Age Group	Mean Difference	SE	df	t	p_{tukey}
Friends	18-34	-	Friends	35+	0.3665	0.193	400	1.902	0.402
		-	Family	18-34	0.3031	0.174	400	1.743	0.504
		-	Family	35+	-0.9673	0.188	400	-5.141	< .001
		-	Occupation	18-34	0.1812	0.180	400	1.006	0.916
		-	Occupation	35+	0.2062	0.189	400	1.091	0.885
	35+	-	Family	18-34	-0.0634	0.188	400	-0.337	0.999
		-	Family	35+	-1.3337	0.201	400	-6.625	< .001
		-	Occupation	18-34	-0.1852	0.194	400	-0.956	0.931
		-	Occupation	35+	-0.1603	0.202	400	-0.793	0.969
Family	18-34	-	Family	35+	-1.2703	0.183	400	-6.924	< .001
		-	Occupation	18-34	-0.1218	0.175	400	-0.695	0.982
		-	Occupation	35+	-0.0969	0.184	400	-0.526	0.995
	35+	-	Occupation	18-34	1.1485	0.189	400	6.067	< .001
		-	Occupation	35+	1.1734	0.198	400	5.932	< .001
Occupation	18-34	-	Occupation	35+	0.0249	0.190	400	0.131	1.000

In the outcomes of estimated marginal means, shown in table 5.21, the within- and between-group differences for the age-groups can be seen more obviously. For the age group 18-34, we note that the marginal means are quite close to each other. The marginal mean for overall responsible consumption for age group 18-34 in the environment of occupation is ($\mu = 3.28$), in

the environment of friends (μ = 3.46) and in the environment of family (μ = 3.16). Furthermore, for the age group 35+, the marginal mean for overall responsible consumption behavior is the highest in the environment of family (μ = 4.43), followed by the environment of occupation (μ = 3.36), and then the environment of friends (μ = 3.10).

The same is also acknowledged by the 95% confidence interval for the marginal means displayed in Table 5.21. The table shows that there is no overlap in the 95% confidence intervals for marginal means between the two age groups in the environment of family (18-34: [2.92-3.39]; 35+ [4.16-4.70]). No overlap between 95% confidence intervals indicates that the means are significantly different (Burns & Burns, 2008). Furthermore, we detect overlap in the 95% between all the confidence intervals of overall responsible consumption in the social environments of the age group 18-34. And regarding the within-group differences for the age group 35+, we see no overlap between the 95% confidence intervals of responsible consumption in the environment of occupation (2.98-3.53) and family (4.16-4.70), and between family (4.16-4.70) and friends (2.81-3.38).

Table 5.21: Estimated Marginal Means Table Overall Responsible Consumption Interaction

Age Group	Social Environment	Mean	SE	95% Confidence Interval	
				Lower	Upper
18-34	Friends	3.46	0.126	3.21	3.71
	Family	3.16	0.119	2.92	3.39
	Occupation	3.28	0.128	3.03	3.53
35+	Friends	3.10	0.145	2.81	3.38
	Family	4.43	0.139	4.16	4.70
	Occupation	3.26	0.140	2.98	3.53

At last, according to Burns & Burns (2008), graphs serve as good depictions of interaction between two independent variables. Accordingly, Figure 5.6 visualizes the interaction effects graphically.
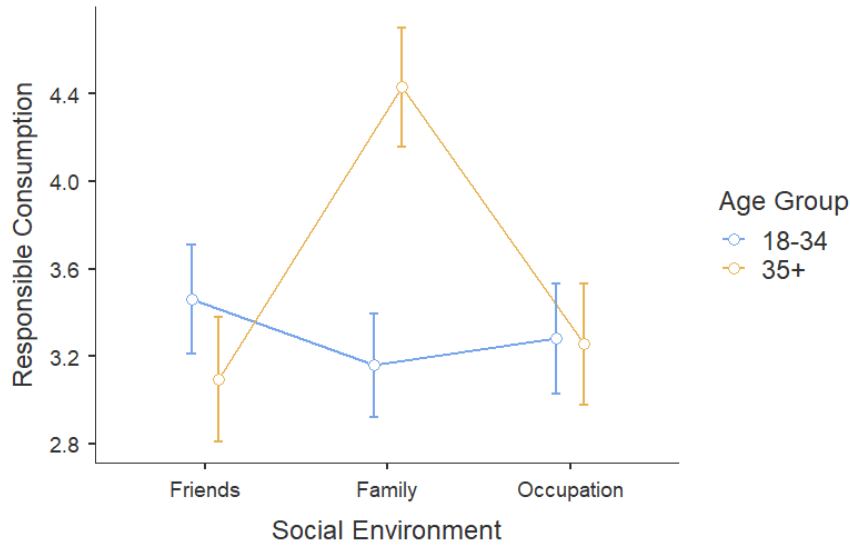
Figure 5.6: Estimated Marginal Means Plot Overall Responsible Consumption Interaction

Hence, based on the confidence interval for the difference in marginal mean and the factorial ANOVA Post Hoc test of between-subjects' effects, we conclude that there are statistically significant mean differences in overall responsible consumption behavior between the age groups 18-34 and 35+ in the environment of family. Put differently, the effect of the social environment family is not independent of the levels of age. Furthermore, we reject the null hypothesis for H_2. We also conclude that for people aged between 18 and 34, friends do not have the highest influence on responsible consumption behavior (H_3). At last, we accept the null hypothesis for H_4 that for people aged between 35 and 65, family has the highest influence on overall responsible consumption behavior.

Recycling

H₂ₐ:	There is a significant interaction effect between age groups and social environments when it comes to **recycling** behavior.

H₃ₐ:	For people aged between 18 and 34 friends have the highest influence on **recycling** behavior.

H₄ₐ:	For people aged between 35 and 65, family has the highest influence on **recycling** behavior.

Looking at the results of the factorial ANOVA for the overall recycling behavior (Table 5.22), the main effect for age is not significant ($F_{(1,400)} = 1.47$, $p = 0.226$). Consistent with the analysis on H_1, the main effect for social environments on recycling behavior is significant ($F_{(2,400)} = 43.86$, $p = < 0.001$). Furthermore, we observe that the interaction effect between age and social environment is significant ($F_{(2,400)} = 14.34$, $p = < 0.001$). Hence, we reject the null hypothesis of H_{2a} and accept the alternative that there is a significant interaction effect between age groups and social environments when it comes to recycling behavior. This means that age does not directly influence the recycling behavior of individuals, but in interaction with social environments there are differences. With less than 7%, the partial eta² indicates a relatively low effect size.

Table 5.22: Factorial ANOVA Recycling

	Sum of Squares	df	Mean Square	F	p	$\eta^2 p$
Social Environment	134.07	2	67.04	43.86	< .001	0.180
Age Group	2.25	1	2.25	1.47	0.226	0.004
Social Environment ✳ Age Group	43.84	2	21.92	14.34	< .001	0.067
Residuals	611.39	400	1.53			

We ran the Post Hoc tests for each of the two age groups to identify which environments influence which age group more. As shown in Table 5.23, the outcomes of the Post Hoc multiple comparisons between age groups and social environment indicate a significant mean difference between the age groups recycling behavior in the environment of family ($p < 0.001$). However, there are no significant mean differences between the age groups recycling behavior in the environment of friends ($p = 0.991$) and occupation ($p = 0.247$). Consequently, looking at the mean differences within the age groups, we observe the following: For recycling behavior within the age group 18-34 there are significant mean differences between the social environments of friends and family ($p = 0.033$). Looking at age group 35+, there are significant mean differences in recycling behavior between the environments of friends and family ($p < 0.001$) and between the environments of family and occupation ($p < 0.001$).

Table 5.23: Post Hoc Test Recycling Interaction

Comparison								
Social Environment	**Age Group**		**Social Environment**	**Age Group**	**Mean Difference**	**SE**	**df**	**t**	**p_tukey**
Friends	18-34	-	Friends	35+	0.131	0.219	400	0.597	0.991
		-	Family	18-34	-0.594	0.198	400	-3.006	0.033
		-	Family	35+	-1.648	0.214	400	-7.708	< .001
		-	Occupation	18-34	-0.119	0.205	400	-0.583	0.992
		-	Occupation	35+	0.353	0.215	400	1.643	0.571
	35+	-	Family	18-34	-0.725	0.214	400	-3.391	0.010
		-	Family	35+	-1.779	0.229	400	-7.774	< .001
		-	Occupation	18-34	-0.250	0.220	400	-1.135	0.867
		-	Occupation	35+	0.222	0.230	400	0.967	0.928
Family	18-34	-	Family	35+	-1.054	0.209	400	-5.054	< .001
		-	Occupation	18-34	0.475	0.199	400	2.385	0.164
		-	Occupation	35+	0.947	0.209	400	4.521	< .001
	35+	-	Occupation	18-34	1.529	0.215	400	7.105	< .001
		-	Occupation	35+	2.001	0.225	400	8.901	< .001
Occupation	18-34	-	Occupation	35+	0.472	0.216	400	2.185	0.247

Looking at the estimated marginal means in Table 5.24, we see the between age group and within age group differences more clearly. Starting with the between age group differences, the marginal mean recycling behavior is higher for the age group 35+ in the environment of family ($\mu = 4.95$) in evaluation to age group 18-34 ($\mu = 3.39$). Regarding the within-group differences, for the age group 18-34, we note that the mean for recycling behavior is the highest in the environment of family ($\mu = 3.89$), then for occupation ($\mu = 3.42$) and the lowest in the environment of friends ($\mu = 3.30$). Continuing with the within-group differences for the age group 35+, we detect that the marginal mean for recycling behavior is the highest in the environment of family ($\mu = 4.95$), then in the environment of friends ($\mu = 3.14$) and at last in the environment of occupation ($\mu = 2.94$).

The 95% confidence intervals for the estimated marginal means further confirm this finding since the intervals for the different social environments and age groups show the following significant mean differences. The 95% confidence interval levels for the age group 18-34 are friends (3.015-3.580), family (3.625-4.159), and occupation (3.130-3.703). The 95% confidence interval levels for the age group 35+ are friends (2.842-3.491), family (4.634-5.257), and occupation (2.63-3.258). Here, we observe no overlap in the 95% confidence interval between

recycling behavior in the social environment of family for the two different age groups. Regarding the within-group differences for the age group 18-34, we spot an overlap of the 95% confidence interval between all environments. For the age group 35+ there is no overlap between the social environments of friends and family, and between occupation and family. Furthermore, Figure 5.7 graphically supports the findings of the mean differences.

Table 5.24: Estimated Marginal Means Table Recycling Interaction

Age Group	Social Environment	Mean	SE	95% Confidence Interval	
				Lower	Upper
18-34	Friends	3.30	0.144	3.01	3.58
	Family	3.89	0.136	3.62	4.16
	Occupation	3.42	0.146	3.13	3.70
35+	Friends	3.17	0.165	2.84	3.49
	Family	4.95	0.158	4.63	5.26
	Occupation	2.94	0.160	2.63	3.26
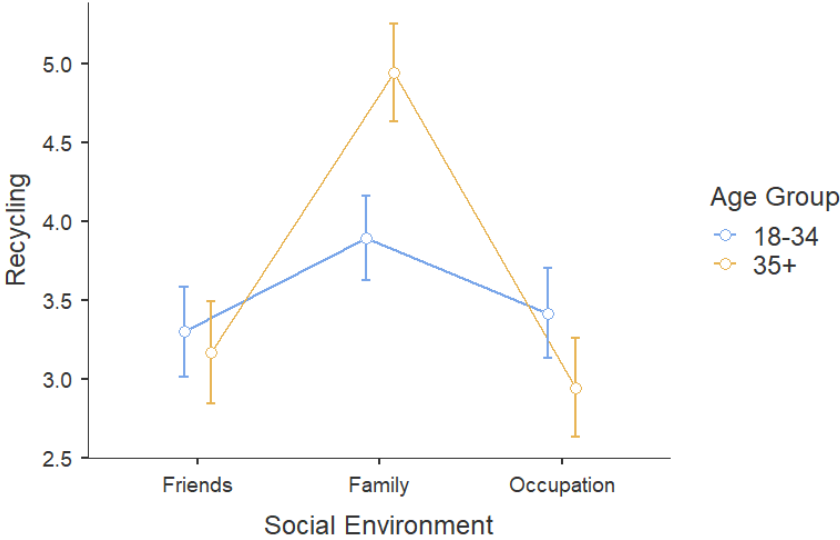
Figure 5.7: Estimated Marginal Means Plot Recycling Interaction

Grounded on the ANOVA test of between-subjects' effects, the Post Hoc analysis, and the marginal means there are statistically significant mean differences in recycling behavior between the age groups 18-34 and 35+ in the environment of family (H_{2a}). Additionally, based on the outcomes, we reject the null hypothesis for H_{3a} which states that for people aged between

18 and 34 friends have the highest influence on recycling behavior. In fact, family has the highest influence on recycling behavior for the age group 18-34. We accept the null hypothesis H_{4a} stating that for people aged between 35 and 65, family has the highest influence on recycling behavior.

Eco-friendly food consumption

> **H2b:** There is a significant interaction effect between age groups and social environments when it comes to eco-friendly **food** consumption.

> **H3b:** For people aged between 18 and 34 friends have the highest influence on eco-friendly **food** consumption.

> **H4b:** For people aged between 35 and 65, family has the highest influence on eco-friendly **food** consumption.

The factorial ANOVA (Table 5.25) supports what the analysis on H_1 already indicated; there are significant mean differences in responsible food consumption between the different social environments ($F_{(2,400)} = 28.3414$, $p < 0.001$). The outcomes further show that the main effect for age is not significant ($F_{(1,400)} = 35.7283$, $p = 0.855$) which is why we accept the null hypothesis for no significant mean differences in responsible food consumption between the age groups. However, the test does display that the interaction between social environments and age groups is significant ($F_{(2,400)} = 35.7283$, $p < 0.001$). Hence, we can conclude that there is a statistically significant interaction between age and social environments for responsible food consumption. We reject the null hypothesis that the effect of either social environments on eco-friendly food consumption is independent of the levels of age and accept the alternative of a significant interaction effect (H_{2b}). With the partial eta² of 0.152 the effect size for the interaction between social environments and age groups for eco-friendly food consumption leans towards a medium effect size.

Table 5.25: Factorial ANOVA Eco-Friendly Food Consumption

	Sum of Squares	df	Mean Square	F	p	η²p
Social Environment	103.8657	2	51.9328	28.3414	< .001	0.124
Age Group	0.0616	1	0.0616	0.0336	0.855	0.000
Social Environment ✳ Age Group	130.9372	2	65.4686	35.7283	< .001	0.152
Residuals	732.9599	400	1.8324			

Next, we conducted a Post Hoc test. Table 5.26 outlines between which social environment and age group the interaction lies regarding responsible food consumption. From this, we conclude that there are significant mean differences between the age groups' eco-friendly food consumption in the environment of friends ($p < 0.001$) and family ($p < 0.001$). There are no significant mean differences between the age groups' eco-friendly food consumption in the environment of occupation ($p = 1.67$). For the age group 18-34, there are no within-group differences in eco-friendly food consumption between the social environments [Friends – Family ($p = 0.858$); Family – Occupation ($p = 0.975$); Occupation – Friends ($p = 0.435$)]. Looking at the age group 35+, there are within-group differences in eco-friendly food consumption between the social environments of friends and family ($p = < 0.001$), and between family and occupation ($p < 0.001$).

Table 5.26: Post Hoc Test Eco-Friendly Food Consumption Interaction

		Comparison						
Social Environment	Age Group		Social Environment	Age Group	Mean Difference	SE	df	t	p_{tukey}
Friends	18-34	-	Friends	35+	1.278	0.240	400	5.328	< .001
		-	Family	18-34	0.250	0.216	400	1.154	0.858
		-	Family	35+	-1.247	0.234	400	-5.326	< .001
		-	Occupation	18-34	0.414	0.224	400	1.849	0.435
		-	Occupation	35+	0.559	0.235	400	2.376	0.167
	35+	-	Family	18-34	-1.028	0.234	400	-4.390	< .001
		-	Family	35+	-2.524	0.251	400	-10.076	< .001
		-	Occupation	18-34	-0.863	0.241	400	-3.579	0.005
		-	Occupation	35+	-0.719	0.252	400	-2.857	0.051
Family	18-34	-	Family	35+	-1.497	0.228	400	-6.555	< .001
		-	Occupation	18-34	0.165	0.218	400	0.755	0.975
		-	Occupation	35+	0.309	0.229	400	1.348	0.758
	35+	-	Occupation	18-34	1.661	0.236	400	7.052	< .001
		-	Occupation	35+	1.806	0.246	400	7.336	< .001
Occupation	18-34	-	Occupation	35+	0.144	0.237	400	0.610	0.990

Looking at the outcomes of the estimated marginal means, displayed in Table 5.27, we can observe the mean differences more evidently. Here we can see that the marginal means of responsible food consumption in the environment of friends is higher for the age group 18-34 (μ = 3.75) then for the age group 35+ (μ = 2.47). Additionally, the marginal means of responsible food consumption in the environment of family are higher for the age group 35+ (μ = 4.99) in comparison to the age group 18-34 (μ = 3.50). Regarding the within-group differences for the age group 18-34, the marginal mean for eco-friendly food consumption for this group is the highest in the environment of friends (μ = 3.75), then in the environment of family (μ = 3.50) and the lowest in the environment of occupation (μ = 3.33). For the age group 35+, the marginal mean for eco-friendly food consumption is the highest in the environment of family (μ = 4.99), secondly in the environment of occupation (μ = 3.19) and the lowest in the environment of friends (μ = 2.47).

The 95% confidence intervals for the different social environments and age groups, shown in table 5.17, confirm the significant mean differences. The 95% confidence interval levels for the age group 18-34 are friends (3.438-4.057), family (3.206-3.790), and occupation (3.020-3.647). The 95% confidence interval levels for the age group 35+ are friends (2.115-2.826),

family (4.654-5.335), and occupation (2.845-3.532). We detect no overlap in the 95% confidence interval between responsible food consumption in the surrounding of family or friends for the two different age groups. This implies that the means are significantly different. For the age group 18-34, there is an overlap between the 95% confidence intervals for marginal means of eco-friendly food consumption in all social environments. Nevertheless, for the age group 35+, there is no overlap between the 95% confidence intervals between the social environment friends and family, and family and occupation. Again, Figure 5.8 visualizes the mean differences graphically.

Table 5.27: Estimated Marginal Means Table Eco-Friendly Food Consumption Interaction

Age Group	Social Environment	Mean	SE	95% Confidence Interval	
				Lower	**Upper**
18-34	Friends	3.75	0.157	3.44	4.06
	Family	3.50	0.149	3.21	3.79
	Occupation	3.33	0.160	3.02	3.65
35+	Friends	2.47	0.181	2.11	2.83
	Family	4.99	0.173	4.65	5.34
	Occupation	3.19	0.175	2.85	3.53
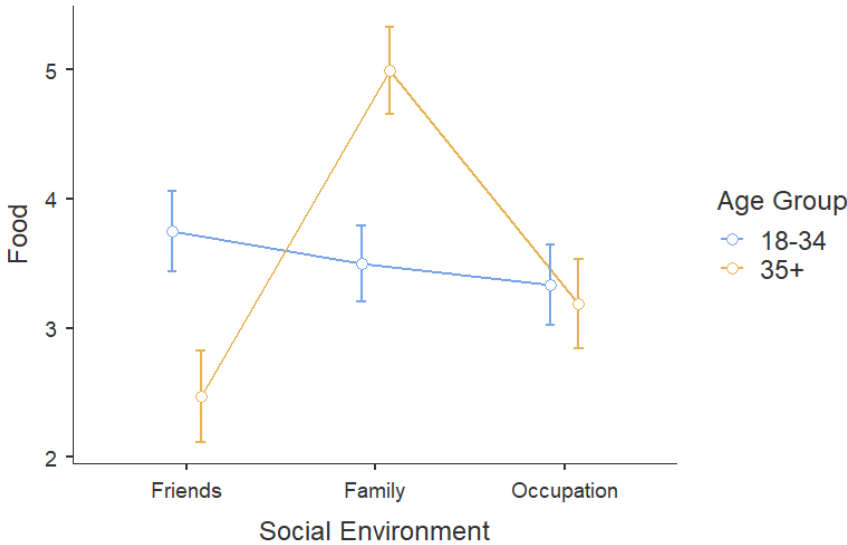
Figure 5.8: Estimated Marginal Means Plot Eco-Friendly Food Consumption Interaction

In short, supported by the ANOVA Post Hoc test of between-subjects' effects, marginal means, and 95% confidence interval for marginal means we can confirm that there are statistically

significant mean differences in eco-friendly food consumption between the age groups 18-34 and 35+ in the environment of family and friends (H_{2b}). Moreover, we reject the null hypothesis for H_{3b} that for people aged between 18 and 34 friends have the highest influence on eco-friendly food consumption. Regarding H_{4b}, we accept the null hypothesis that for people aged between 35 and 65, family has the highest influence on eco-friendly food consumption.

Transportation Choice

> **H_{2c}:** There is a significant interaction effect between age groups and social environments when it comes to **transportation** choice.

> **H_{3c}:** For people aged between 18 and 34 friends have the highest influence on **transportation** choice.

> **H_{4c}:** For people aged between 35 and 65, family has the highest influence on **transportation** choice.

Linking back to the analysis on H_1, we confirmed that transportation behavior does not differ in the different social environments since the one-way ANOVA did not show significant mean differences. The outcomes of the factorial ANOVA in Table 5.28 also demonstrate that the main effect for social environments on transportation is indeed not significant ($F_{(2,396)} = 0.731$, $p = 0.482$). However, the main effect for the age group is significant ($F_{(1,396)} = 9.888$, $p = 0.002$). This means that age influences transportation behavior, but the social environment does not. Moreover, the analysis shows that the interaction effect between age and social environment for transportation is significant ($F_{(2,396)} = 5.919$, $p = 0.003$). Hence, we reject the null hypothesis and accept the alternative hypothesis, H_{2c}. The interaction effect size is relatively low at less than 3 %.

Table 5.28: Factorial ANOVA Transportation Choice

	Sum of Squares	df	Mean Square	F	p	η^2
Social Environment	2.84	2	1.42	0.731	0.482	0.003
Age Group	19.19	1	19.19	9.888	0.002	0.024
Social Environment ✳ Age Group	22.97	2	11.49	5.919	0.003	0.028
Residuals	768.44	396	1.94			

Moving on to the results of the Post Hoc comparisons tests presented in Table 5.29, we observe significant mean differences between the two age groups in transportation behavior in the environment of family ($p < 0.001$). As previously mentioned, the social environment has no significant effect on transportation choice. Consequently, looking at the within age group 18-34, no significant mean differences are indeed detected [Friends – Family ($p = 0.093$); Family – Occupation ($p = 0.219$); Occupation – Friends ($p = 0.998$)]. The same counts for the within-group differences for the age group 35+, where no significant mean differences in transportation choice are found between the social environments for this group [Friends – Family ($p = 0.209$); Family – Occupation ($p = 0.996$); Occupation – Friends ($p = 0.484$)].

Table 5.29: Post Hoc Test Transportation Choice Interaction

		Comparison						
Social Environment	**Age Group**		**Social Environment**	**Age Group**	**Mean Difference**	**SE**	**df**	**t**	**p$_{tukey}$**
Friends	18-34	-	Friends	35+	0.1369	0.247	396	0.555	0.994
		-	Family	18-34	0.5885	0.224	396	2.627	0.093
		-	Family	35+	-0.4481	0.241	396	-1.860	0.429
		-	Occupation	18-34	0.1000	0.232	396	0.431	0.998
		-	Occupation	35+	-0.3222	0.242	396	-1.331	0.767
	35+	-	Family	18-34	0.4516	0.242	396	1.865	0.425
		-	Family	35+	-0.5850	0.258	396	-2.269	0.209
		-	Occupation	18-34	-0.0369	0.250	396	-0.148	1.000
		-	Occupation	35+	-0.4591	0.259	396	-1.774	0.484
Family	18-34	-	Family	35+	-1.0366	0.236	396	-4.389	< .001
		-	Occupation	18-34	-0.4885	0.227	396	-2.149	0.265
		-	Occupation	35+	-0.9107	0.237	396	-3.838	0.002
	35+	-	Occupation	18-34	0.5481	0.244	396	2.246	0.219
		-	Occupation	35+	0.1259	0.253	396	0.497	0.996
Occupation	18-34	-	Occupation	35+	-0.4222	0.245	396	-1.723	0.517

From the estimated marginal means, displayed in Table 5.30, we can see that responsible transportation behavior in the environment of family and occupation is higher for the age group 35+ (μ = 3.78) in comparison to age group 18-34 (μ = 2.74). Furthermore, the marginal mean for transportation choice for the age group 18-34 is the highest in the environment of friends (μ = 3.33), followed by the environment of occupation (μ = 3.23), and the lowest in the environment of family (μ = 2.74). For the age group 35+ the marginal mean for transportation choice is the highest in the environment of family (μ = 3.78), next in the environment of occupation (μ = 3.66), and the lowest in the environment of friends (μ = 3.20).

The 95% confidence interval levels for the marginal means of transportation behavior for the age group 18-34 are friends (3.015-3.652), family (2.441-3.049), and occupation (2.906-3.561). The 95% confidence interval levels for the marginal means of transportation behavior for the age group 35+ are friends (2.830-3.562), family (3.431-4.132), and occupation (3.302-4.009). Here, we detect no overlap between the 95% confidence interval levels for transportation behavior in the environment of family between the two age groups, which indicates that the means are significantly different. Regarding the within-group differences, there is no overlap between the 95% confidence intervals for the marginal means for transportation choice in the different

social environments neither for the age group 18-34 nor for the age group 35+. Finally, the mean differences can be seen in Figure 5.9.

Table 5.30: Estimated Marginal Means Table Transportation Choice Interaction

				95% Confidence Interval	
Age Group	**Social Environment**	**Mean**	**SE**	**Lower**	**Upper**
18-34	Friends	3.33	0.162	3.01	3.65
	Family	2.74	0.155	2.44	3.05
	Occupation	3.23	0.166	2.91	3.56
35+	Friends	3.20	0.186	2.83	3.56
	Family	3.78	0.178	3.43	4.13
	Occupation	3.66	0.180	3.30	4.01
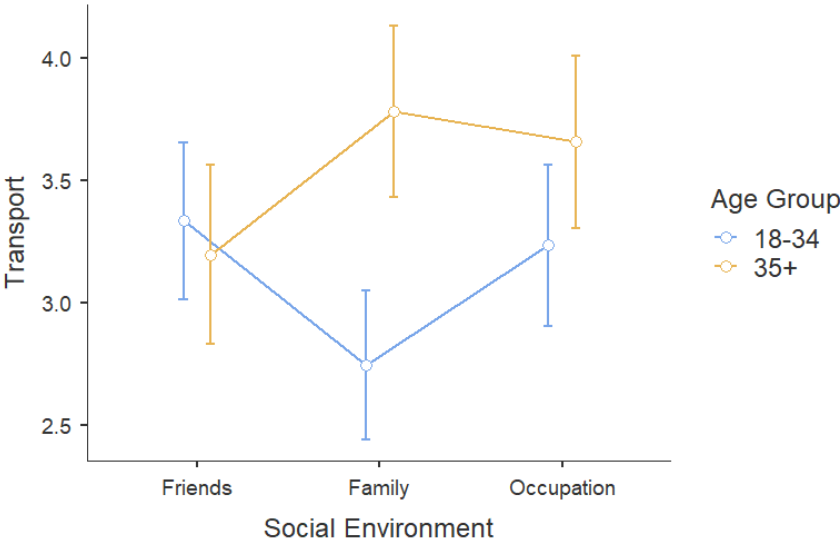
Figure 5.9: Estimated Marginal Means Plot Transportation Choice Interaction

Reinforced by the ANOVA, its Post Hoc test of between-subjects' effects, marginal means, and 95% confidence interval, we can confirm H_{2c} which states that there are statistically significant mean differences in transportation choice between the age groups 18-34 and 35+. This is particularly true in the environment of family. However, the Post Hoc tests of between subjects' effects do not indicate significant within-group mean differences for transportation choice between the social environments for the age group 18-34 or 35+. This means that we have no statistical proof about which social environment influences which age group most significantly, and thus reject the null hypotheses for both H_{3c} and H_{4c}. For people aged between 18 and 34

friends do not have a significantly higher influence on transportation choice than other environments and for people aged between 35 and 65, family does not have a significantly higher influence on transportation choice consumption either.

Sustainable Fashion Choice

> **H2d:** There is a significant interaction effect between age groups and social environments when it comes to sustainable **fashion** choice.

> **H3d:** For people aged between 18 and 34 friends have the highest influence on sustainable **fashion** choice.

> **H4d:** For people aged between 35 and 65, family has the highest influence on sustainable **fashion** choice.

The fourth dimension of responsible consumption is eco-friendly fashion consumption. In the outcomes of the one-way ANOVA for <u>analysis on H_1</u>, we observed that the main effect for the social environment is not significant on eco-friendly fashion consumption. The factorial ANOVA for sustainable fashion consumption in Table 5.31 confirms this (F $(2,398) = 2.42$, p $= 0.090$). On the other hand, the main effect for the age group is significant (F $(1,398) = 18.26$, p < 0.001). Further, the interaction effect between age and social environments is also significant (F $(2,398) = 12.26$, p < 0.001). Hence, we accept H2d and conclude that the interaction effect of social environments on eco-friendly fashion consumption is dependent on the age group. Again, the effect size is relatively low, accounting for 5.5% of variability only.

Table 5.31: Factorial ANOVA Sustainable Fashion Consumption

	Sum of Squares	df	Mean Square	F	p	η²
Social Environment	8.10	2	4.05	2.42	0.090	0.011
Age Group	30.56	1	30.56	18.26	< .001	0.041
Social Environment ✳ Age Group	41.02	2	20.51	12.26	< .001	0.055
Residuals	666.15	398	1.67			

Continuing with the Post Hoc comparisons tests, we can detect between which social environments and age groups significant mean differences lie. Looking at Table 5.32, we observe that there are significant mean differences between the age groups' sustainable fashion choices in the environment of family (p < 0.001). There are no significant mean differences between age groups in sustainable fashion choices in the environment of friends (p = 0.997) or occupation (0.997). Alongside we can see within-group mean differences for both age groups. For the age group 18-34, significant mean differences in sustainable fashion choice can be observed between the social environments of friends and family (p < 0.001), and looking at age group 35+, we find mean differences in sustainable fashion choice between the environments of family and occupation (p < 0.016).

Table 5.32: Post Hoc Test Sustainable Fashion Consumption Interaction

| | | | **Comparison** | | | | | |
Social Environment	**Age Group**		**Social Environment**	**Age Group**	**Mean Difference**	**SE**	**df**	**t**	**p_tukey**
Friends	18-34	-	Friends	35+	-0.112	0.232	398	-0.483	0.997
		-	Family	18-34	0.926	0.207	398	4.478	< .001
		-	Family	35+	-0.526	0.224	398	-2.351	0.176
		-	Occupation	18-34	0.339	0.214	398	1.582	0.611
		-	Occupation	35+	0.235	0.225	398	1.046	0.902
	35+	-	Family	18-34	1.038	0.226	398	4.589	< .001
		-	Family	35+	-0.414	0.242	398	-1.714	0.523
		-	Occupation	18-34	0.451	0.233	398	1.935	0.382
		-	Occupation	35+	0.347	0.243	398	1.430	0.709
Family	18-34	-	Family	35+	-1.452	0.218	398	-6.657	< .001
		-	Occupation	18-34	-0.587	0.208	398	-2.820	0.056
		-	Occupation	35+	-0.691	0.219	398	-3.153	0.021
	35+	-	Occupation	18-34	0.865	0.225	398	3.842	0.002
		-	Occupation	35+	0.761	0.235	398	3.236	0.016
Occupation	18-34	-	Occupation	35+	-0.104	0.226	398	-0.459	0.997

Table 5.33 shows the estimated marginal means for sustainable fashion choice for each age group in the different social environments. Here, we depict that for the age group 35+ eco-friendly fashion consumption is higher in the environment of family ($\mu = 3.58$) in comparison to age group 18-34 ($\mu = 2.54$). Controversially, the marginal means of eco-friendly fashion consumption in the environment of occupation and friends is comparable between both age groups. Within the age group 18-34, the marginal mean for sustainable fashion is the highest in

the environment of friends (μ = 3.47), followed by the environment of occupation (μ = 3.13) and the lowest in the environment of family (2.54). Within the age group 35+, the estimated marginal mean for responsible fashion consumption is the highest in the social environment of family (μ = 3.99), then in the environment of friends (μ = 5.58) and the lowest in the environment of occupation (μ = 3.23).

This is also acknowledged by the 95% confidence interval levels for the marginal means. These give the following values for the eco-friendly fashion consumption of age group 18-34: friends (3.173-3.764), family (2.263-2.821), and occupation (2.830-3.429). And for the age group 35+, the values of the 95% confidence interval level were: friends (3.234-3.926), family (3.669-4.320), and occupation (2.905-3.562). Consequently, there is no overlap between the levels of the age groups in the environment of family. Regarding the within-group differences for the age group 18-34, we detect no overlap in the 95% confidence interval between the social environment's friends and family. For the age group 35+, there is no overlap between the environment occupation and family. In Figure 5.10 the mean differences are visualized graphically.

Table 5.33: Estimated Marginal Means Table Sustainable Fashion Choice Interaction

Age Group	Social Environment	Mean	SE	95% Confidence Interval	
				Lower	Upper
18-34	Friends	3.47	0.150	3.17	3.76
	Family	2.54	0.142	2.26	2.82
	Occupation	3.13	0.152	2.83	3.43
35+	Friends	3.58	0.176	3.23	3.93
	Family	3.99	0.166	3.67	4.32
	Occupation	3.23	0.167	2.90	3.56
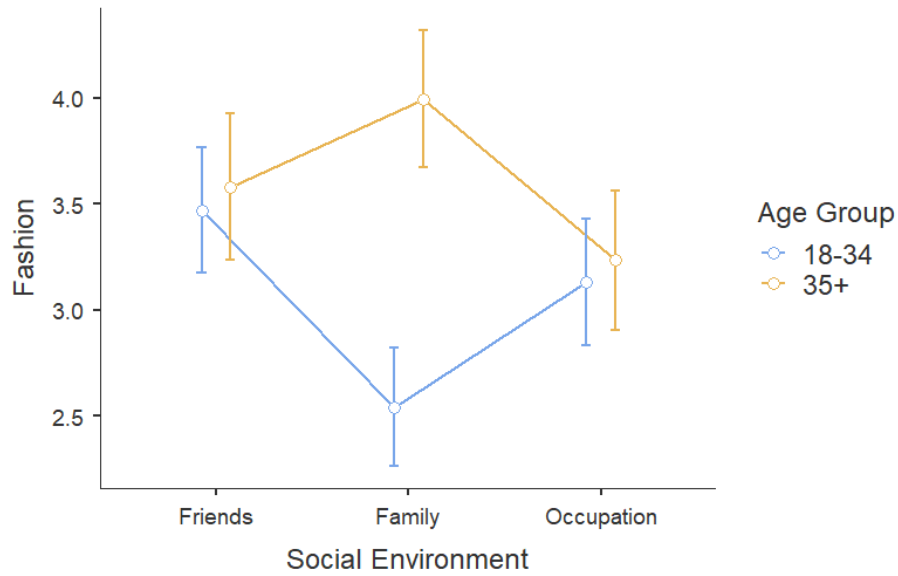
Figure 5.10: Estimated Marginal Means Plot Sustainable Fashion Choice Interaction

Based on the preceding analysis, we can confirm that the social environment of family has a significant effect on responsible fashion consumption of the two age groups which in turn supports the acceptance of H_{2d}. The Post Hoc test of between-subjects' effects additionally indicates a significant mean difference in sustainable fashion choice within the age group 18-34 between the social environment of friends and family. Therefore, we reject H_{3d} and conclude that for people aged between 18 and 34 friends do not have the highest influence on sustainable fashion choice. Furthermore, there are mean differences in sustainable fashion choice for the age group 35+ between the environments of occupation and family with the family mean being significantly higher. We, thus, accept the hypothesis for H_{4d} and attest that for people aged between 35 and 65, family does have the highest influence on sustainable fashion choice.

Table 5.34, Table 5.35, and Table 5.36 summarize the hypothesis tests for the age-related hypotheses.

Table 5.34: Hypothesis 2 Summary

Hypothesis 2	Reject / Accept	Social environment
H$_2$: There is a significant interaction effect between age groups and social environments when it comes to **overall responsible** consumption.	Accept	Family
H$_{2a}$: There is a significant interaction effect between age groups and social environments when it comes to **recycling** behavior.	Accept	Family
H$_{2b}$: There is a significant interaction effect between age groups and social environments when it comes to eco-friendly **food** consumption.	Accept	Family Friends
H$_{2c}$: There is a significant interaction effect between age groups and social environments when it comes to **transportation** choice.	Accept	Family
H$_{2d}$: There is a significant interaction effect between age groups and social environments when it comes to sustainable **fashion** choice.	Accept	Family

Table 5.35: Hypothesis 3 Summary

Hypothesis 3	Reject / Accept
H$_3$: For people aged between 18 and 34 friends have the highest influence on **overall responsible consumption** behavior.	Reject
H$_{3a}$: For people aged between 18 and 34 friends have the highest influence on **recycling** behavior.	Reject
H$_{3b}$: For people aged between 18 and 34 friends have the highest influence on eco-friendly **food** consumption.	Reject
H$_{3c}$: For people aged between 18 and 34 friends have the highest influence on **transportation** choice.	Reject
H$_{3d}$: For people aged between 18 and 34 friends have the highest influence on sustainable **fashion** choice.	Reject

Table 5.36: Hypothesis 4 Summary

Hypothesis 4	Reject / Accept
H₄: For people aged between 35 and 65, family has the highest influence on **overall responsible consumption** behavior.	Accept
H₄ₐ: For people aged between 35 and 65, family has the highest influence on **recycling** behavior.	Accept
H₄ᵦ: For people aged between 35 and 65, family has the highest influence on eco-friendly **food** consumption.	Accept
H₄ᵧ: For people aged between 35 and 65, family has the highest influence on **transportation** choice.	Reject
H₄ᵨ: For people aged between 35 and 65, family has the highest influence on sustainable **fashion** choice.	Reject

6 Discussion and Key Findings

Following the in-depth analysis, this chapter is concerned with the discussion of major findings. The structural setup of this section follows our research hypotheses. The first part presents and discusses the findings on our first hypothesis which investigated the influence of social environments on responsible consumption behavior. The next part is concerned with the results of the incorporation of age and presents the key findings and discussions on H_2, H_3, and H_4.

6.1 Key Findings

In the following, we quickly summarize the key findings that can be drawn from the preceding analysis. Looking at the outcomes of the analysis of H_1, we observe a strong effect of social environments on individuals' responsible consumption behavior. For the overall responsible consumption behavior, as well as for recycling and eco-friendly food consumption, there are powerful differences between the groups of friends and family and between family and occupation. More precisely, the family surrounding for all these behaviors indicates the highest influence on responsible consumption behaviors. And while for sustainable fashion consumption, friends have a larger influence on behavior than family, the transportation choice is not considerably impacted by the social environments.

We also looked at age as a further element that might influence these coherences. Our analysis on age showed that there are significant interaction effects between age groups and social environments for all behaviors tested. That means that for all consumption behaviors, overall responsible consumption, as well as for all its four sub-categories, age proved to have a meaningful influence on the effect of social environments on the behaviors. Especially in the family environment, age groups show extreme differences in behaviors. For all responsible consumption behaviors, the social environment of family influences people aged 35+ more than the younger people aged 18 to 34. Additionally, the opposing effect uncovered for eco-friendly food consumption in the surrounding of friends. Here the younger age group is influenced more by the surrounding of their friends than the older age group.

Looking at the age groups individually, we also saw which social surroundings influence each age group the most. For the age group 35+, the reference group of families indeed has the

highest influence on certain behaviors. More precisely, this is true for the overall responsible consumption behavior, recycling, and eco-friendly food consumption. For transportation choice and sustainable fashion choice this is not the case. Further, it is an interesting finding that the younger age group, aged 18 to 34, does not indicate a single social environment to have a way stronger influence than all of the other social surroundings.

6.2 The Effect of Social Environments on Responsible Consumption Behavior

Our first research hypothesis tested the effect of social environments on individuals' responsible consumption behavior. First of all, we want to mention that literature on the responsible consumer claims people to be future-oriented and concerned about responsible consumption (i.e. Anderson & Cunningham, 1972; Roberts, 2020; Webster, 1975). The overall tendency of below-average answers obtained for our Likert scale questionnaire stands in contrast to these assumptions. As this is not the major focus of our analysis, we only want to mention this as a marginal note.

The literature on the value-action gap discusses the inconsistency between people's claimed values and the actions they actually execute (Barr, 2006; Blake, 1999; Chai et al., 2015; Kennedy et al., 2009; Vermeir & Verbeke, 2006). Our research expands on this notion, arguing that there is not only a gap between values and actions but also an inconsistency in actions when in different social surroundings. This phenomenon we claim the *action-action gap*. Our findings of existing influences of social environments on responsible consumption behavior are also in line with research on situational consumption. Fernandes and Panda (2019) have already established that consumption is a social decision-making process. Within the literature, social aspects are identified as the major contributor when it comes to situational consumption (Belk, 1975; de Castro, 1988; Horgan et al., 2019; Liu, Liu & Jiang, 2019). According to Escalas and Bettman (2003), people tend to compare themselves and their actions to others. The social environment, or how they call it, reference groups, therefore majorly influences social consumption decisions.

The results of this paper support the notion given within literature that social environments, and more precisely the environments of occupation, friends, and family have the power to influence

responsible consumption behavior differently. When testing the influence of each social environment independently on the four dimensions of responsible consumption, our results show that for overall responsible consumption, as well as for recycling and eco-friendly food consumption behavior is largely influenced by the social environment people act in. Thus, consumers were influenced by different social environments and tend to consume more responsibly in one environment compared to another. Furthermore, this paper contributes to the existing body of literature by growing investigation on the influence of situational variables and motives behind the emerging value-action gap in consumer behavior.

While overall responsible consumption, recycling, and eco-friendly food consumption are highly influenced by the surrounding of family, fashion shows different results since friends have the highest influence on sustainable fashion consumption. Due to these dissimilarities between the influence of each social environment on the different dimensions of responsible consumption, distinctions between the effect of the social environments on each dimension need to be made to clarify the impact of social environments on responsible consumption behavior.

As far as research on past literature reveals, there is no existing research combining the impact of social environments on responsible consumption and clarification on the factors responsible for the value-action gap. As this study has illuminated the impact of social environments on responsible consumption behavior, and in particular recycling, eco-friendly food consumption, transportation, and sustainable fashion choice, it is therefore important to understand the findings in the context of past literature and theories to find similarities, dissimilarities and eventually explanations. Accordingly, we look at each of the considered dimensions individually.

Starting with the findings of recycling behavior, our study indicates that recycling is of higher concern in the social environment of family compared to friends and occupation. A possible explanation for this can be found in Belk's (1975) work where he mentions time as a situational variable that influences behavior. Even though he uses it in a different way, his ideas translate to our phenomenon. Within Belk's temporal perspective on situations he, inter alia, defines time by "time constraints imposed by prior or standing commitments" (Belk, 1975, p.159). Linking back to our three social environments, people in daily life are confronted with various commitments. Especially at work, people are likely to feel stressed and overwhelmed by the tasks they have to finish. Activities with friends account for more joyful stress but still create time pres-

sure. And while there are also obligations and deadlines for family occasions, these are considered to be less strict and oftentimes more at leisure. Therefore, people feel less time-constraint when spending time with their family. Consequentially, individuals have more time to put effort into recycling behaviors when being with their families. Nainggolan et al. (2019) confirm the idea of time as a leading influence on recycling. Since there is no distinct literature on differences in recycling behavior in different social environments, our research expands the knowledge, supporting the argument that family has the highest impact on recycling behaviors.

Secondly, as mentioned before, a majority of research on responsible consumption focusses on food (Andorfer, 2013; Horgan et al., 2019; Lockie et al., 2002; Vermeir & Verbeke, 2006). Our research indicates that within the area of eco-friendly food consumption, the social surrounding of family has the largest influence. This stands in contrast to the findings of Horgan et al. (2019), who unveiled that people tend to eat more meat when eating with their family compared to other social compositions. A possible explanation for this difference could be the setup of the research. While our study clearly stated the focused on the responsibility aspect of consumption, Horgan et al. (2019) simply asked participants to document their food intake without any stated ulterior motive. Further, our question about meat consumption, in particular, is grouped with other responsible food consumption behaviors which makes it difficult to compare. Researchers like Lockie et al. (2002) also mention that cost, convenience, and availability play a major role in eco-friendly and organic food consumption. Parts of our sample are students and young professionals with little personal income. While eco-friendly food is often more expensive than less sustainable alternatives, it makes sense that individuals report a more responsible consumption when surrounded by their family where costs are likely to be covered by other family members.

Coming to sustainable fashion consumption we want to come back to previous literature that divides situational influences on consumption in two types of situational variables, namely, the obvious (price of a product, other persons presence, or time of the days) and the less obvious (moods, plans, and purposes of a consumer) (Belk, 1975; Hornik, 1982). Looking deeper into the less obvious variables, the literature clarified that consumers often make purchase decisions based on the norms and values of reference groups because they want to be associated with and accepted by these groups (Escalas & Bettman, 2003; Fernandes & Panda, 2019). Considering the outcomes of the effect of social environments on sustainable fashion consumption, our study identifies friends to have the largest influence on responsible behavior. Kwon (1988) identified

that young adolescents/students and professionals are highly concerned about their self-representation towards the social environment when it comes to clothing choice. We want to refine that within this study, the social environment of occupation refers to work and school networks. However, our study gave different results and recognized that the effect of the environment of occupation is lower on sustainable fashion consumption than the effect of the environment of friends. Hence, combining the findings of this study with past bodies of literature, it is possible to argue that the obvious situational variables, like the presence of members of one's reference group, affect the less obvious situational variables like the initial purpose. Therefore, we may conclude that in the case of sustainable fashion consumption in the environment of friends (obvious variable) the purpose of a consumer could be good self-representation to belong to the reference group (less obvious variable). Another explanation for the difference in findings could be the classification, because when there is no clear distinction for "young students" it could also be recognized as friends.

6.3 Age & the Effect of Social Environments on Responsible Consumption Behavior

As previously clarified in the [literature review](#) there are contradicting opinions inside academia about the characteristics of the responsible consumer. On the one hand, early authors hold it that the responsible consumer is a middle-aged person in the category generation X (35+), who is less status-conscious (Anderson & Cunningham, 1972; Berkowitz & Lutterman, 1968). On the other hand, research after 1996 has it that generations Y and Z (18-34) are prone to consume the most responsible, they are status-conscious, and more likely to consume responsibly when it adds value to their social status (Andorfer, 2013; Zou & Chan, 2019). When combining these contradictions with the findings in the literature on situational variables, a differentiation was made between two age categories and the corresponding characteristics that mark the responsible consumer in past literature.

Hence, with these opposing literature streams, the second aim of this study was to test if age can act as a moderating variable influencing the impact of social environments on responsible consumption behavior. The results revealed that the impact of social environments is indeed dependent on age. Explicitly for overall responsible consumption, recycling choice, eco-friendly food consumption, transportation choice, and sustainable fashion, the age groups show

differences in the environment of family, where the people aged 35+ are more influenced than the younger people. Thus, we can confirm that age plays a role when it comes to responsible consumption in the environment of family. More precisely, the higher the age, the higher the effect of the social environment of family on responsible consumption behavior. Further, this indicates that when in comparison to the age group 18-34, the responsible consumption behavior of respondents aged above 35 is more impacted by the social environment of family.

According to Berkowitz & Lutterman (1968) generation X (35+) of responsible consumers is greatly influenced by the norms of and education by their reference groups. Anderson & Cunningham (1972) confirmed this and clarified that this responsible consumer prefers inner-direction over outer-direction, meaning social status is not considered as significantly important when deciding on responsible consumption. In light of past research on the impact of social reference groups on consumption behavior, friends were identified as the reference group with the most impact when it comes to making consumption choices to gain a high social status and belonging. Controversially, the social environment of family has a very high influence on the development of personal norms and values (Escalas & Bettman, 2003; Fernandes & Panda, 2019). Hence, built on the findings in previous literature, we looked deeper into the idea that for people aged between 35 and 65, family has the highest influence on responsible consumption behavior. The differences between social environments within the age group 35+ established that for overall responsible consumption, recycling, eco-friendly food consumption, and sustainable fashion choice family plays the biggest role in comparison to the environment of occupation and friends. Thus, our study confirms the suggestions in the literature that responsible consumers aged 35+ are indeed more influenced by the social surroundings of family.

Furthermore, as stated in the literature, generations Y and Z (18-34) are prone to consume more responsible in comparison to generation X (35+) and more status-conscious when it comes to making consumption choices (Andorfer, 2013; Roberts, 2020; Zou & Chan, 2019). According to academia, friends are the reference group with the most impact when it comes to making consumption choices to gain high social status and belonging (Fernandes & Panda, 2019). Taking this into consideration, we also tested the assumption that for people aged between 18 and 34, friends have the highest influence on responsible consumption behavior. The results of the tests for overall responsible consumption, recycling, transport, and fashion in different social environments revealed mean differences between age group 18-34 and age group 35+ in the environment of family, where age group 35+ has a higher mean. At the same time, we have no

proof that the means for overall responsible consumption, recycling, transportation, and fashion is higher for the age group 18-34 in the social environment of friends. Nevertheless, the outcomes showed differences between the age groups in the social environment of friends, indicating that when it comes to eco-friendly food consumption the age group 18-34 is more influenced by the social environment of friends in comparison to the age group 35+. The differences within the younger age group for responsible consumption, recycling, food, transportation, and fashion also do not show meaningful differences. Consequently, the findings of this study do not support the notion that for people aged between 18 and 34, friends have the highest influence on responsible consumption behavior.

A possible explanation can be found inside academia. It is confirmed by academics that consumption choices for generation Y and Z (18-34) are often strongly influenced by the formation of status within reference groups (Arnould & Thompson, 2005; Fernandes & Panda, 2019). Though, according to Cova (1997) and Patterson and Larsen (2018) individuals nowadays are always on an identity quest and the development of a personal identity is additionally a strong influence on consumption choices. As Cova (1997, p.221) states "[t]he conquest of self has become inescapable and each individual, whether they come from, must accomplish the feat of becoming someone by showing their difference". In his research on community and consumption, Cova clarifies that we are moving toward an individualistic society and personal identity is developed via differentiation. This is confirmed by later research of Patterson and Larsen (2018) who explain that consumption nowadays is an identity project where a consumer is more self-focused and concerned with the creation, enhancement, transformation, and maintenance of a sense of personal identity. Hence, by combining these findings with the outcomes of the study, it is possible to argue that age group 18-34 is indeed prone to consume more responsibly when it adds value to their identity project. However, due to the identity project and aim for differentiation, people in the age group 18-34 are prone to stick with this identity despite the social environment, as this differentiates themselves from others.

7 Conclusion

This chapter provides a quick summary of the key conclusions and contributions of our work. It briefly resumes to our research aim and provides theoretical and practical contributions. Further, it outlines the study's limitations and provides suggestions for future research direction for the extension and development of the phenomenon and areas related to the *action-action gap* in responsible consumption behavior.

7.1 Research Aim

Past research neglects the importance of combining literature on responsible consumption within the value-action gap with the situational variables of social surroundings that are highly influential on people's behaviors. This study aims to combine these streams of literature by evaluating the impact of three different social environments on individual's responsible consumption behavior. Additionally, the study examines how age influences the effects on responsible consumption. Therefore, the purpose of this study is to generate a deeper understanding of the influence of social environments on individuals' responsible consumption behavior. After conducting an in-depth literature review to identify suitable concepts and dimensions that need to be taken into account, we set up a survey to investigate the differences in responsible consumption behavior on individuals by different social environments. Concluding, we found out that social environments indeed have varying influences in different aspects of responsible consumption. Further, age proved as a significant moderator meaning that for different age groups, different social environments have more or less strong influences on an individual's responsible consumption behavior. A more throughout conclusion is combined with theoretical and practical implications in the following.

Theoretical Contributions

The major theoretical contribution made in this thesis is the confirmation of the assumption that social environments influence how individuals' responsible consumption practices change when being surrounded by different reference groups. A vast amount of previous research focuses on the value-action gap in the context of responsible consumption, investigating possible explanations and solutions to lessen the inconsistency between what people say they value and the actions they execute. Similarly, studies on situational consumption demonstrate how different situational influences, among other social surroundings, impact behavior (i.e. Arnould & Thompson, 2005; Belk, 1975; Chai et al., 2015; Cova, 1997). Even though there is extensive research on all of these areas, little interlinking elements can be found. Therefore, our research is the first of its kind, focusing on the investigation of the phenomenon of the *action-action gap* which concerns the inconsistency of behavior in different social situations.

While a main theoretical contribution of our research lies in verifying the influence of social surroundings on the responsible consumption behavior of individuals, we also went a step further and looked at age as a moderating variable. Previous research on situational consumptions and reference group behavior already strongly supposed that there are differences between different social environments. Still, there is no existing research or proof of this concerning the tested environments on responsible consumption. The difference in changing behavior based on age in different social environments has not been reported on in any sustainability or responsibility related area. While studies are focusing on different age groups, we could not find research on the combination and interaction of age differences. Thus, our study largely contributes to the theoretical knowledge on how behavior differs not only between situations but also between different age groups in the same social environments. The idea of the *action-action gap* on its own and in combination with age as an additional differentiator of behavior can be used for future studies that focus on elaborating social environments as a situational variable on responsible consumption and the value-action gap.

Fundamentally, this research contributes to existing literature and theory as it provides deep insights into important aspects of consumption behavior. More precisely, it illuminates the importance to consider different areas of consumption behavior jointly. It initiates discussion on differing influences of different social environments and therefore provides ground for future

research. Additionally, it justifies the incorporation of considerations of age when studying concepts related to the value-action gap.

7.2 Practical Contributions

Besides the theoretical implications, the findings of this research also provide valuable insights for practical purposes. On a very general level, businesses today are concerned with the variability in consumer behavior. As every research on consumer behavior, our research also contributes to shedding some light on this confusion by trying to explain the inconsistency in consumption. More specifically, our research reveals a clearer picture of the differences in an individual's responsible consumption behavior in different social environments as well as differences between age groups within the same social environment. By focusing on the relationship between social environments and corresponding individuals' responsible consumption, this research provides marketers and policymakers with relevant indicators that can help to build or improve a strong marketing strategy. It, furthermore, allows us to develop a deeper understanding of the underlying factors responsible for the inconsistency in individuals' behavior in different social situations. In other words, it illuminates and creates awareness for the phenomenon of the *action-action gap* and explains it.

Responsible consumption, especially with the ongoing buzz on sustainable and eco-friendly consumption, is a continuous driver of today's business, marketing, and policy practices. The awareness and demand for responsible production, consumption, and behavior are constantly in debate. Thus, taking a stand on responsibility issues is highly recommended for any business working in today's society as well as for governments and the respective policymakers. From the business perspective, the findings of our research are valuable for companies in general which want to improve their responsibility stand and for those companies wanting to specify and market their products very niched and differentiated.

7.2.1 Implications for Marketers

A major contribution for marketers is the enlightenment about the fact that people do not only act inconsistently with what they state they value but also people's responsible consumption behavior is largely influenced by the social surrounding they consume with. For marketers that

means that the same person needs to be targeted differently depending on the social environment, they consume with or for. Targeting strategies often target specific people but based on our finding the same person needs to be targeted differently depending on the occasion or social surroundings the person is consuming. Doing so presents a challenge for marketers because oftentimes the same product needs to be marketed differently for the same person. For example, our findings indicate that individuals consume most responsible in the surrounding of their families. This is especially true for recycling and eco-friendly food consumption. Marketing efforts should, therefore, be tailored accordingly, placing special emphasis on promoting sustainability and responsibility for products that are often used with families or when addressing people while grocery shopping with and for their families. Figure 7.1 shows how such an advertisement could look like on the example of "grow-your-own" products. In the past years, the "grow-your-own" trend has entered the field, where consumers can purchase small pre-grown tomato plants or bell pepper plants, for example. Consequently, they plant them in the back yard to farm their own crops (Lynott, 2019). A technique to market the "grow-your-own" products to generation X (35+) is then to outline the benefits of farming your own crops in the environment of family.

Figure 7.1: "Grow-Your-Own" Advertisement

Especially for the food and recycling sector, we identified family to have a significantly high impact on responsible consumption. Consequentially, corresponding marketing strategies should be taken into consideration when looking at differences in social environments. For the age group differences, eco-friendly food consumption clearly indicates that younger people are more influenced by their friends while for the older age group it is the surrounding of their families. When aiming to sell the same product to both of these groups, different strategies might, therefore, be suitable.

7.2.2 Implications for Policymakers

According to research by Deloitte (2020), sustainability is firmly on the agendas of companies and governments. This can be observed by, for example, the Swedish laws that require households and companies to separate waste strictly (Hinde, 2019). However, as previously mentioned within the [background of this study](#), consumers do not always behave in accordance to the efforts of companies and governments yet. Consequentially, we believe that policymakers can also benefit from the practical contributions of this study to trigger responsible consumption behavior. A policymaker here is referred to as the person who makes decisions that are consequently executed by businesses or governments (Giesler & Veresiu, 2014).

By 2050, the world's population is expected to reach 9.8 billion inhabitants of which 70 percent are projected to live in urban areas (National Geographic, 2019). National geographic sketched the city of the future which is currently a hot topic among policymakers of cities and municipalities globally. The main focus within the project lies in developing sustainable cities (Marland, 2018). This requires designing to scale, developing smart buildings with solar panels and sky gardens, but also green streets and triggering cycling and public transport among citizens (Marland, 2018; National Geographic, 2019). Our research indicates that age is an important differentiator when it comes to targeting especially for the age group 35+. This group is influenced more strongly by the social environment of family. Therefore, policymakers could trigger behavior by putting it into the context of family. Taking the recent developments of cities and municipalities into consideration we thought of an example of a smart bicycle path that would trigger cycling among families instead of using the car. Cycling within urban areas is often considered as too dangerous for children according to parents and for that reason the car is often the preferred option (Marland, 2018). Consequently, to trigger cycling it is important to consider the notion of safety and develop smart and safe bicycle paths to trigger cycling among families.

Regarding the age group 18-34, the study did not identify one single social environment with a significantly higher impact. For fashion, for example, the social environment of friends has a higher influence than family but at the same time it is not meaningfully higher than the influence of occupation. Therefore, we cannot say that one social environment is the most important and has the strongest impact on responsible consumption behavior for the age group 18-34. Therefore, a strategy that focusses on a family environment might work very well when targeting an

older segment, but when approaching younger individuals, the social environment does not impact the individual's behavior as much.

Overall, the practical implications are manifold, especially because the research deals with a topic interesting for a wide variety of industries and concerns a topic relevant for most businesses and policymakers in today's time. Still, we acknowledge that some limitations need to be addressed in future research to verify and expand on our findings.

7.3 Limitations and Future Research

Although this research delivers theoretical and practical contributions and insights about how social environments affect responsible consumption behavior, while considering the effect of age, it also faces several limitations. That means that there are influences, the researchers could, for different reasons, not control and aspects that were left out which need further consideration. The following chapter elaborates on these limitations and gives corresponding recommendations for future research.

Scope limitations in terms of time, budget, and resources available are major constraints of this study because they come with a variety of restrictions that can be made up for by additional studies. On a very general level, we want to acknowledge that we had to concentrate on a limited number of social environments and responsible consumption behaviors in our study. First of all, numerous possible social environments can be studies other than only friends, family, and occupation. Inside academia, the social environment is commonly divided into different reference groups, normative, dissociative, and comparative ones (Escalas & Bettman, 2003; Mi et al., 2019; Panda et al., 2020). Due to time and budgeting restrictions, we only focused on three normative reference groups. Nonetheless, previous streams of literature outline that comparative and dissociative reference groups also have an influence on consumption behavior (Fernandes & Panda, 2019; Panda et al., 2020). The comparative reference groups are the groups one wished to be associated with and the dissociative are the reference groups one does not wish to be associated with (Escalas & Bettman, 2003). Therefore, to draw more general conclusions on the effect of social environments on responsible consumption behavior, it is recommended to analyze the impact of comparative and dissociative reference groups. Linking this to the notion that the younger generation is less status-conscious when it comes to responsible

consuming in comparison to older generations (Belk, 1988; Roberts, 2020), it would then be interesting to check whether the same effect of comparative and dissociative reference groups counts for the age group 18-34 as for the age group 35+.

At the same time, even within the chosen environments, differences may occur. For example, one might behave differently with one's close family of parents and siblings than for a bigger festive event with the larger circle of family. Literature also suggests to not only compare different social environments to each other but also to compare these to people's individual consumption behaviors. Castro's (1988) study, for example, indicates differences in people's consumption when being alone compared to when being accompanied by others. Therefore, future research can expand on our findings by incorporating people's individual responsible consumption practices to consumption in or for social groups.

Apart from diversifying the consumption environments under consideration, we also suggest conducting more research that considers a greater variety of responsible consumption behaviors. While we focused on recycling, eco-friendly food consumption, transportation choice, and sustainable fashion consumption, responsible consumption is a field of interest for almost every industry. While each of the practices tested can still be dismantled more accurately, research can at the same time also study completely different fields of consumption. Examples that we came across in our literature examination but did not include in our research are the usage of energy and energy-related products or beauty and household products.

Another limitation, or rather said, an opportunity for future research is the cultural background of this study. As explained before, Sweden provides a nice guiding reference for responsibility related research. Still, different cultures within and outside of the western world might differ greatly from the Swedish idea of responsibility. Future studies are needed to provide a better ground for generalization or differentiation. As already explained in the methodological limitations, a problem that comes hand in hand with this is the non-probability sampling of our sample population that does not perfectly represent the overall Swedish population.

A major point of future research that due to the limited scope was not part of our research is the investigation of the reasons for the differences in responsible consumption behavior between social environments. While our study is largely concerned with finding differences between social environments and age groups and therefore supporting the existence of the *action-action gap*, we did not look into the "whys" of these discrepancies. To gain a deeper understanding of

the reasons for the discrepancy between different social environments or age groups it might be interesting to research the reasons more in-depth and find out if and where differences in reasons lie. It would be interesting to investigate whether people consume more or less responsible for the sake of responsibility itself or more for the recognition they gain from it. Based on the contradicting literature on the responsible consumer that goes along with our age group segmentation, it might, for example, be interesting to study the relevance of status in responsible consumption and to see if there are significant differences between the age groups since the literature indicates that the younger age group is supposedly more steered by status benefits.

Further, other moderating variables like time or financial circumstances might shed a clearer light on the explanation of the *action-action gap*. Relatively low effect sizes indicated that age and social environments only have a limited impact on responsible consumption and, thus, might serve as a supporting aspect to improve marketing efforts or promote responsible policies, but other aspects need to be considered, too. Especially when comparing age groups, it is very likely that respondent's disposable income differs significantly. As quickly touched on before, sustainable and responsible consumption options often come with higher prices. Thus, a possible reason for inconsistency in consumption behaviors might be the inability to afford the corresponding products. Accordingly, future research might be able to further elaborate this and give suggestions on possible pricing strategies. Similarly, the simple lack of availability might play a role. We also mentioned time as a possible qualifier of responsible consumption that comes along with the different social environments. Researching the time, or more precisely the perceived time available, might therefore also help to better understand the differences in consumption behaviors between different social contexts.

Lastly, there is another limitation that cannot be neglected taking into account the time this research was conducted. Starting in December 2019, the COVID-19 pandemic continuously affects worldwide consumption dramatically (World Health Organization, 2020). Apart from the methodological limitations that we discussed more in detail before in the chapter of limitations and future research, the Corona crisis comes with some other limitations as well. A further effect of the COVID-19 crisis is the inability or restriction of our studies participants to move between the social environment in comparison to before the crisis, due to contamination danger. According to Saunders, Lewis, and Thornhill (2019) is it important to design an easily understandable questionnaire that respondents can relate to. Simple things like having meals in dif-

ferent social environments, taking public transportation, or going to school or work for example, nowadays differ compared to the same situations before the COVID-19 crisis. Therefore, it is currently more difficult for respondents to relate to these situations under normal circumstances. Additionally, consumption behaviors greatly differ from the norm due to the crisis. Stockpiling items like toilet paper or pasta are driven by the fear of undersupply in the future, moving aspects like responsibility in consumption to the background.

Overall, the present research provides a basis for future research to build on. As for any research, it is impossible to account for every eventuality and take all possible options into account. In our eyes, one single research will never be able to explain an entire phenomenon with all its complexities on its own. We want to clearly emphasize that we aimed not for a throughout elaboration with absolute outcomes but rather wanted to encourage and contribute to the discussion surrounding the confusion in consumption behavior.

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Appendix

Appendix A: Questionnaires

Questionnaire Family

Welcome and thank you for joining in on this survey!

The purpose of this research project is to investigate responsible consumption practices in Swedish culture. This is a research project conducted by Pieternella Rozendaal and Marleen Strömer in partial fulfillment of the requirements for our Master's thesis at Lund University. Your participation in this research study is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time.

The procedure involves filling an online survey that should take no longer than **5 minutes**. Your responses will be handled confidentially and anonymously. We do not collect identifying information such as your name, email address, or IP address. The results of this study will be used for scholarly purposes only and may be published through Lund University.

If you have any questions about the research study, please contact puckrozendaal@outlook.com or marleen.stroemer@gmail.com

Clicking on the "I agree" button below indicates that:

• you have read the above information

• you voluntarily agree to participate

• you are at least 18 years of age

○ I agree

Are you a Swedish citizen?

○ Yes

○ No

> **1 Active Filter(s)**
>
> **Filter SD07/F1**
> If any of the following options is selected: **2**
> Then display the text SD15 and finish the interview, after the next button was clicked

What is your gender?

- ○ Male
- ○ Female
- ○ Other
- ○ Prefer not to say

How old are you?

I am ⬚ years old

What is your current employment status?

Multiple-selection is possible.

- ☐ High-school student
- ☐ University student
- ☐ Intern
- ☐ Apprentice
- ☐ Full-time employee
- ☐ Part-time employee
- ☐ Self-employed
- ☐ Unemployed
- ☐ Other: ⬚

The following questions will ask about situations you might encounter in your daily life which are related to the environment and sustainability. Please answer them as honestly as possible. We won't judge. 😊

You will specifically be asked to consider situations when in the surrounding of your **family**, in contrast to being with your friends, coworkers, classmates, or alone.

If a statement does not apply to you or you cannot relate to it, please chose the option "N/A".

	Very strongly disagree	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Very strongly agree	N/A
When with my family, I place higher importance on waste separation than usual.	○	○	○	○	○	○	○	○
When I go shopping with my family, I buy more recycled products than usual.	○	○	○	○	○	○	○	○
When with my family, I am more likely to repair broken products instead of buying new ones than usual.	○	○	○	○	○	○	○	○
When with my family, I buy more bio-labeled food products than usual.	○	○	○	○	○	○	○	○
When with my family, I reduce food waste more than usual.	○	○	○	○	○	○	○	○
When with my family, I eat less meat than usual.	○	○	○	○	○	○	○	○
When with my family, I walk or use public transport for short distances more often than usual.	○	○	○	○	○	○	○	○
When traveling with my family, I avoid taking flights more than usual.	○	○	○	○	○	○	○	○
When with my family, I use the car less often than usual.	○	○	○	○	○	○	○	○
When meeting my family, I feel the need to wear new clothes more than usual.	○	○	○	○	○	○	○	○
When buying clothes to wear when seeing my family, I pay higher attention to long-lasting and eco-friendly clothes than usual.	○	○	○	○	○	○	○	○
When buying clothes to wear when seeing my family, I buy more second-hand clothes than usual.	○	○	○	○	○	○	○	○

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Thanks for completing this survey! You made two students super happy! 😆

If you have any further questions please contact puckrozendaal@outlook.com or marleen.stroemer@gmail.com

Marleen Strömer, Pieternella Rozendaal, Lund University, School of Economics and Management – 2020

Questionnaire Friends

Welcome and thank you for joining in on this survey!

The purpose of this research project is to investigate responsible consumption practices in Swedish culture. This is a research project conducted by Pieternella Rozendaal and Marleen Strömer in partial fulfillment of the requirements for our Master's thesis at Lund University. Your participation in this research study is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time.

The procedure involves filling an online survey that should take no longer than **5 minutes**. Your responses will be handled confidentially and anonymously. We do not collect identifying information such as your name, email address, or IP address. The results of this study will be used for scholarly purposes only and may be published through Lund University.

If you have any questions about the research study, please contact puckrozendaal@outlook.com or marleen.stroemer@gmail.com

Clicking on the "I agree" button below indicates that:

• you have read the above information

• you voluntarily agree to participate

• you are at least 18 years of age

○ I agree

Are you a Swedish citizen?

○ Yes

○ No

```
1 Active Filter(s)

Filter SD07/F1
If any of the following options is selected: 2
Then display the text SD15 and finish the interview, after the next button was clicked
```

What is your gender?

- ○ Male
- ○ Female
- ○ Other
- ○ Prefer not to say

How old are you?

I am [   ] years old

What is your current employment status?
Multiple-selection is possible.

- ☐ High-school student
- ☐ University student
- ☐ Intern
- ☐ Apprentice
- ☐ Full-time employee
- ☐ Part-time employee
- ☐ Self-employed
- ☐ Unemployed
- ☐ Other: [   ]

The following questions will ask about situations you might encounter in your daily life which are related to the environment and sustainability. Please answer them as honestly as possible. We won't judge. 😊

You will specifically be asked to consider situations when in the surrounding of your **friends**, in contrast to being with your family, coworkers, classmates, or alone.

If a statement does not apply to you or you cannot relate to it, please chose the option "N/A".

	Very strongly disagree	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Very strongly agree	N/A
When with my friends, I place higher importance on waste separation than usual.	○	○	○	○	○	○	○	○
When I go shopping with my friends, I buy more recycled products than usual.	○	○	○	○	○	○	○	○
When with my friends, I am more likely to repair broken products instead of buying new ones than usual.	○	○	○	○	○	○	○	○
When with my friends, I buy more bio-labeled food products than usual.	○	○	○	○	○	○	○	○
When with my friends, I reduce food waste more than usual.	○	○	○	○	○	○	○	○
When with my friends, I eat less meat than usual.	○	○	○	○	○	○	○	○
When with my friends, I walk or use public transport for short distances more often than usual.	○	○	○	○	○	○	○	○
When traveling with my friends, I avoid taking flights more than usual.	○	○	○	○	○	○	○	○
When with my friends, I use the car less often than usual.	○	○	○	○	○	○	○	○
When meeting my friends, I feel the need to wear new clothes more than usual.	○	○	○	○	○	○	○	○
When buying clothes to wear when seeing my friends, I pay higher attention to long-lasting and eco-friendly clothes than usual.	○	○	○	○	○	○	○	○
When buying clothes to wear when seeing my friends, I buy more second-hand clothes than usual.	○	○	○	○	○	○	○	○

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Thanks for completing this survey! You made two students super happy! 😄

If you have any further questions please contact puckrozendaal@outlook.com or marleen.stroemer@gmail.com

Questionnaire Occupation

Welcome and thank you for joining in on this survey!

The purpose of this research project is to investigate responsible consumption practices in Swedish culture. This is a research project conducted by Pieternella Rozendaal and Marleen Strömer in partial fulfillment of the requirements for our Master's thesis at Lund University. Your participation in this research study is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time.

The procedure involves filling an online survey that should take no longer than **5 minutes**. Your responses will be handled confidentially and anonymously. We do not collect identifying information such as your name, email address, or IP address. The results of this study will be used for scholarly purposes only and may be published through Lund University.

If you have any questions about the research study, please contact puckrozendaal@outlook.com or marleen.stroemer@gmail.com

Clicking on the "I agree" button below indicates that:

• you have read the above information

• you voluntarily agree to participate

• you are at least 18 years of age

○ I agree

Are you a Swedish citizen?

○ Yes

○ No

1 Active Filter(s)

Filter SD07/F1
If any of the following options is selected: 2
Then display the text SD15 and finish the interview, after the next button was clicked

What is your gender?

- ○ Male
- ○ Female
- ○ Other
- ○ Prefer not to say

How old are you?

I am [   ] years old

What is your current employment status?
Multiple-selection is possible.

- ☐ High-school student
- ☐ University student
- ☐ Intern
- ☐ Apprentice
- ☐ Full-time employee
- ☐ Part-time employee
- ☐ Self-employed
- ☐ Unemployed
- ☐ Other: [   ]

The following questions will ask about situations you might encounter in your daily life which are related to the environment and sustainability. Please answer them as honestly as possible. We won't judge. 😊

You will specifically be asked to consider situations when in your **occupational environment**, in contrast to being with your family, friends, or alone.

If a statement does not apply to you or you cannot relate to it, please chose the option "N/A".

	Very strongly disagree	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Very strongly agree	N/A
When with my colleagues / classmates, I place higher importance on waste separation than usual.	○	○	○	○	○	○	○	○
When I go shopping with my colleagues / classmates, I buy more recycled products than usual.	○	○	○	○	○	○	○	○
When with my colleagues / classmates, I am more likely to repair broken products instead of buying new ones than usual.	○	○	○	○	○	○	○	○
When with my colleagues / classmates, I buy more bio-labeled food products than usual.	○	○	○	○	○	○	○	○
When with my colleagues / classmates, I reduce food waste more than usual.	○	○	○	○	○	○	○	○
When with my colleagues / classmates, I eat less meat than usual.	○	○	○	○	○	○	○	○
When with my colleagues / classmates, I walk or use public transport for short distances more often than usual.	○	○	○	○	○	○	○	○
When traveling with my colleagues / classmates, I avoid taking flights more than usual.	○	○	○	○	○	○	○	○
When with my colleagues / classmates, I use the car less often than usual.	○	○	○	○	○	○	○	○
When meeting my colleagues / classmates, I feel the need to wear new clothes more than usual.	○	○	○	○	○	○	○	○
When buying clothes to wear when seeing my colleagues / classmates, I pay higher attention to long-lasting and eco-friendly clothes than usual.	○	○	○	○	○	○	○	○
When buying clothes to wear when seeing my colleagues / classmates, I buy more second-hand clothes than usual.	○	○	○	○	○	○	○	○

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Thanks for completing this survey! You made two students super happy! 🤩

If you have any further questions please contact puckrozendaal@outlook.com or marleen.stroemer@gmail.com

Marleen Strömer, Pieternella Rozendaal, Lund University, School of Economics and Management – 2020

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Appendix B: Cronbach's α Test Results

Variable	Items	Cronbach's α
Recycling (Friends)	When with my friends, I place higher importance on waste separation than usual.	0.739
	When I go shopping with my friends, I buy more recycled products than usual.	
	When with my friends, I am more likely to repair broken products instead of buying new ones than usual.	
Food (Friends)	When with my friends, I buy more bio-labeled food products than usual.	0.847
	When with my friends, I reduce food waste more than usual.	
	When with my friends, I eat less meat than usual.	
Transport (Friends)	When with my friends, I walk or use public transport for short distances more often than usual.	0.721
	When traveling with my friends, I avoid taking flights more than usual.	
	When with my friends, I use the car less often than usual.	
Fashion (Friends)	When meeting my friends, I feel the need to wear new clothes more than usual.	0.587
	When buying clothes to wear when seeing my friends, I pay higher attention to long-lasting and eco-friendly clothes than usual.	
	When buying clothes to wear when seeing my friends, I buy more second-hand clothes than usual.	
Responsible Consumption (Friends)	Recycling (Friends)	0.864
	Food (Friends)	
	Transport (Friends)	
	Fashion (Friends)	
Recycling (Family)	When with my family, I place higher importance on waste separation than usual.	0.836
	When I go shopping with my family, I buy more recycled products than usual.	
	When with my family, I am more likely to repair broken products instead of buying new ones than usual.	
Food (Family)	When with my family, I buy more bio-labeled food products than usual.	0.679
	When with my family, I reduce food waste more than usual.	
	When with my family, I eat less meat than usual.	
Transport (Family)	When with my family, I walk or use public transport for short distances more often than usual.	0.745
	When traveling with my family, I avoid taking flights more than usual.	

	When with my family, I use the car less often than usual.	
Fashion (Family)	When meeting my family, I feel the need to wear new clothes more than usual.	0.651
	When buying clothes to wear when seeing my family, I pay higher attention to long-lasting and eco-friendly clothes than usual.	
	When buying clothes to wear when seeing my family, I buy more second-hand clothes than usual.	
Responsible Consumption (Friends)	Recycling (Family)	0.814
	Food (Family)	
	Transport (Family)	
	Fashion (Family)	
Recycling (Occupation)	When with my colleagues / classmates, I place higher importance on waste separation than usual.	0.8
	When I go shopping with my colleagues / classmates, I buy more recycled products than usual.	
	When with my colleagues / classmates, I am more likely to repair broken products instead of buying new ones than usual.	
Food (Occupation)	When with my colleagues / classmates, I buy more bio-labeled food products than usual.	0.81
	When with my colleagues / classmates, I reduce food waste more than usual.	
	When with my colleagues / classmates, I eat less meat than usual.	
Transport (Occupation)	When with my colleagues / classmates, I walk or use public transport for short distances more often than usual.	0.905
	When traveling with my colleagues / classmates, I avoid taking flights more than usual.	
	When with my colleagues / classmates, I use the car less often than usual.	
Fashion (Occupation)	When meeting my colleagues / classmates, I feel the need to wear new clothes more than usual.	0.778
	When buying clothes to wear when seeing my colleagues / classmates, I pay higher attention to long-lasting and eco-friendly clothes than usual.	
	When buying clothes to wear when seeing my colleagues / classmates, I buy more second-hand clothes than usual.	
Responsible Consumption (Occupation)	Recycling (Occupation)	0.862
	Food (Occupation)	
	Transport (Occupation)	
	Fashion (Occupation)	

Appendix C: One-Way ANOVA Assumption Check

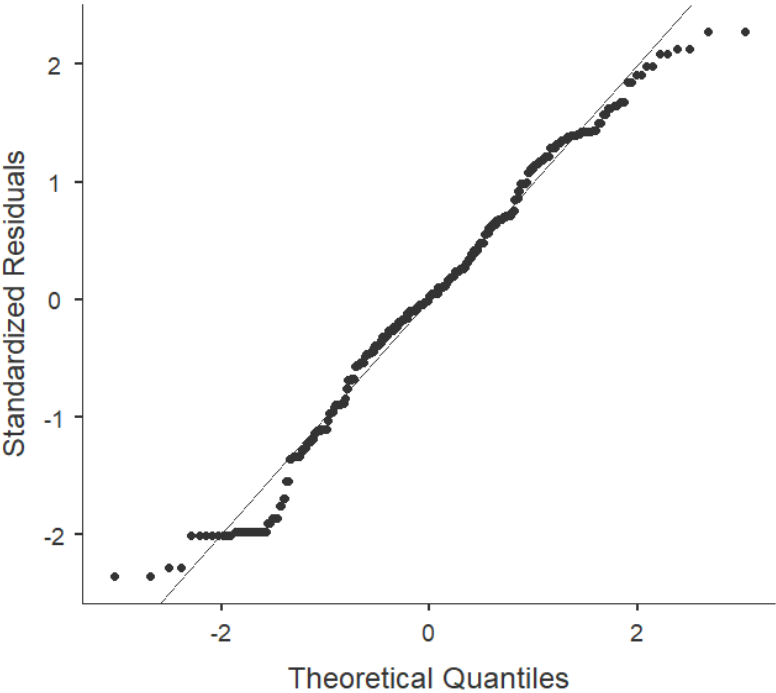**H1 Assumptions: Overall Responsible Consumption Behavior**

Homogeneity of Variances Test (Levene's)

F	df1	df2	p
1.02	2	403	0.362

Normality Test (Shapiro-Wilk)

Statistic	p
0.984	< .001

Q-Q Plot

H1 Assumptions: Recycling Behavior

Homogeneity of Variances Test (Levene's)

F	df1	df2	p
2.04	2	403	0.131

Normality Test (Shapiro-Wilk)

Statistic	p
0.982	< .001

Q-Q Plot
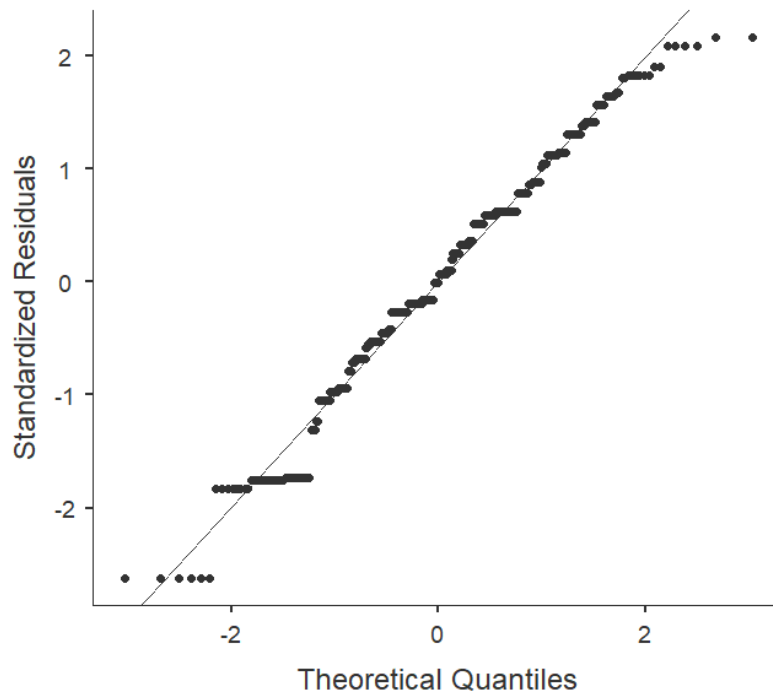
H1 Assumptions: Eco-Friendly Food Consumption

Homogeneity of Variances Test (Levene's)

F	df1	df2	p
2.18	2	403	0.114

Normality Test (Shapiro-Wilk)

Statistic	p
0.981	< .001

Q-Q Plot
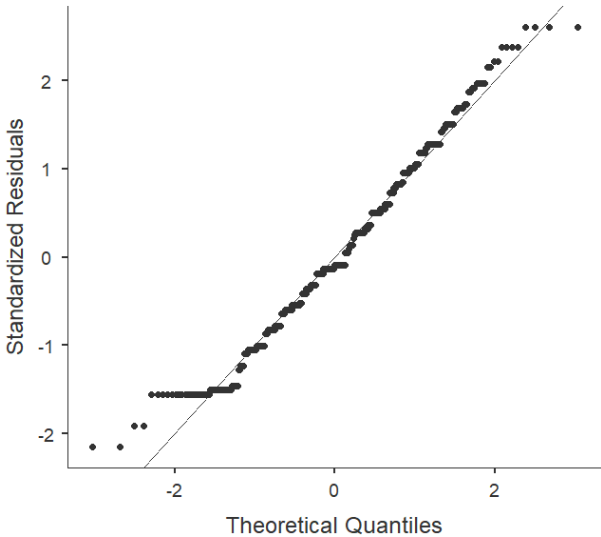
H1 Assumptions: Transportation Choice

Homogeneity of Variances Test (Levene's)

F	df1	df2	p
10.6	2	399	< .001

Normality Test (Shapiro-Wilk)

Statistic	p
0.977	< .001

Q-Q Plot
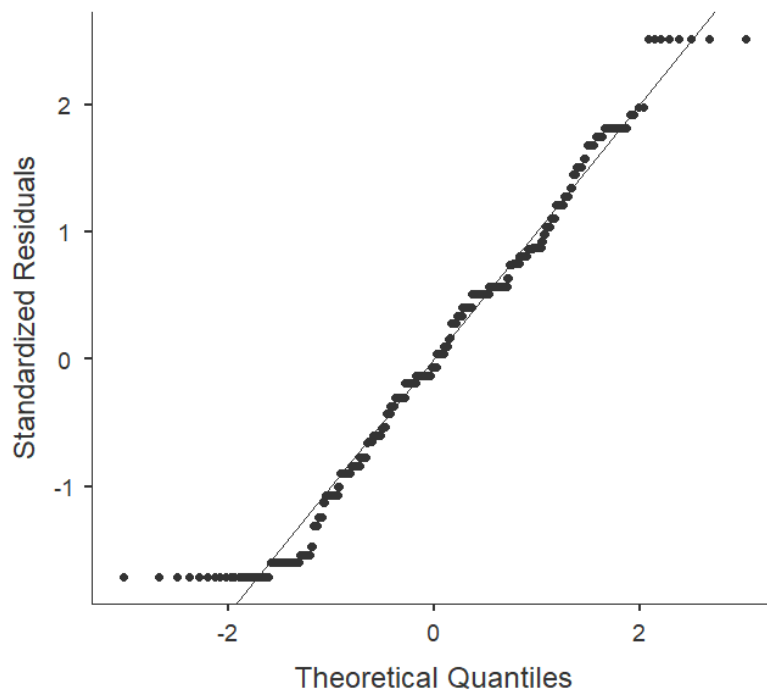
H1 Assumptions: Sustainable Fashion Consumption

Homogeneity of Variances Test (Levene's)

F	df1	df2	p
1.25	2	401	0.287

Normality Test (Shapiro-Wilk)

Statistic	p
0.972	< .001

Q-Q Plot
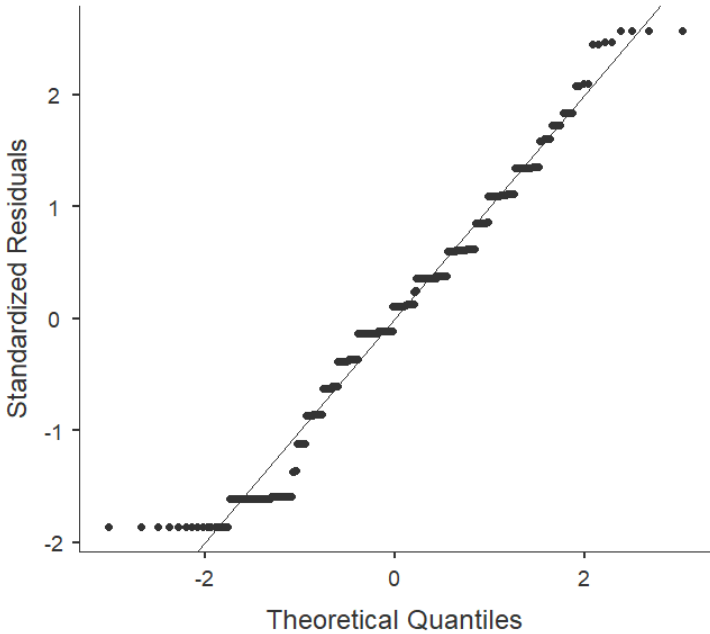
Appendix D: Factorial ANOVA Assumption Check

H2 Assumptions: Overall Responsible Consumption Behavior

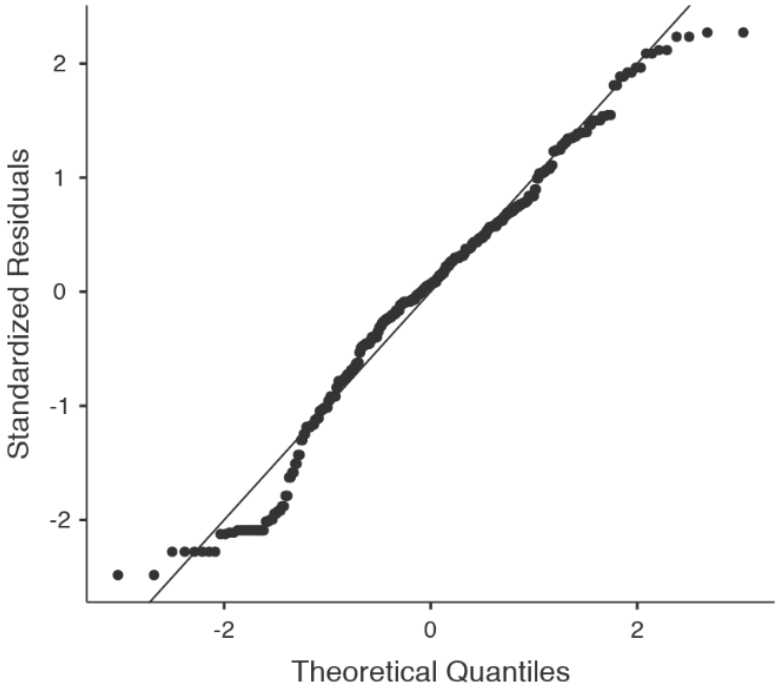Homogeneity of Variances (Levene's)

F	df1	df2	p
9.40	5	400	< .001

Normality test (Shapiro-Wilk)

statistic	p
0.978	< .001

Q-Q Plot

H2 Assumptions: Recycling

Homogeneity of Variances (Levene's)

F	df1	df2	p
1.79	5	400	0.114

Normality test (Shapiro-Wilk)

statistic	p
0.988	0.002

Q-Q Plot
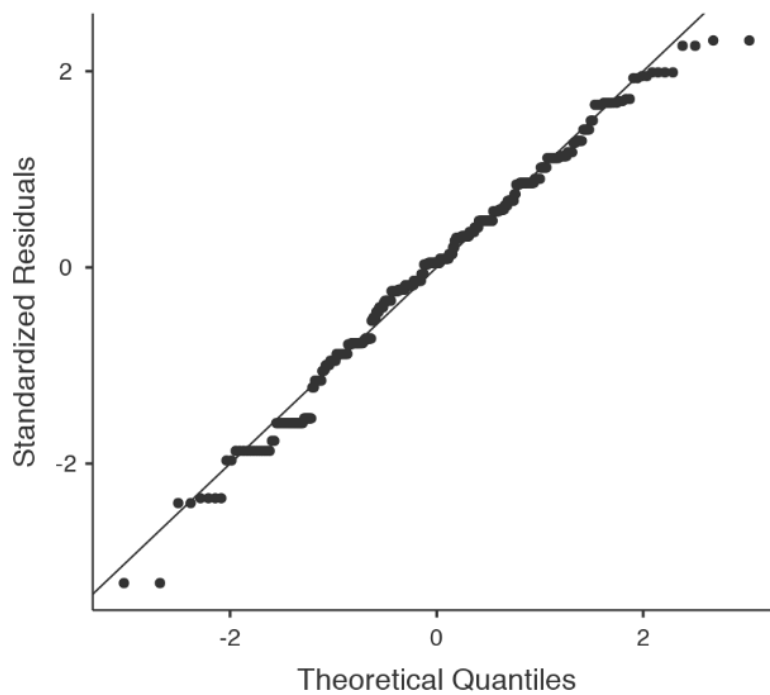
H2 Assumptions: Eco-Friendly Food Consumption

Homogeneity of Variances (Levene's)

F	df1	df2	p
8.42	5	400	< .001

Normality test (Shapiro-Wilk)

statistic	p
0.988	0.003

Q-Q Plot
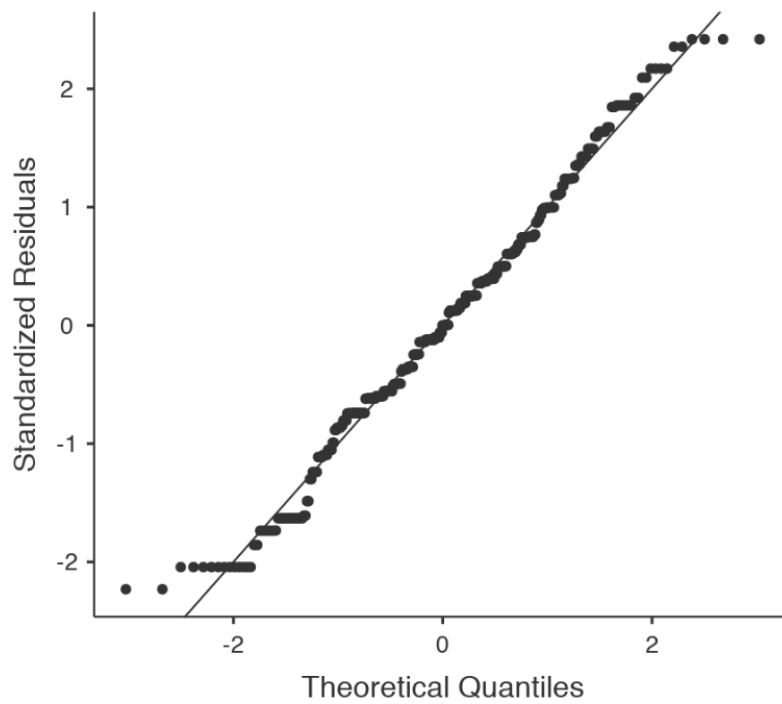
H2 Assumptions: Transportation Choice

Homogeneity of Variances (Levene's)

F	df1	df2	p
14.6	5	396	< .001

Normality test (Shapiro-Wilk)

statistic	p
0.986	< .001

Q-Q Plot
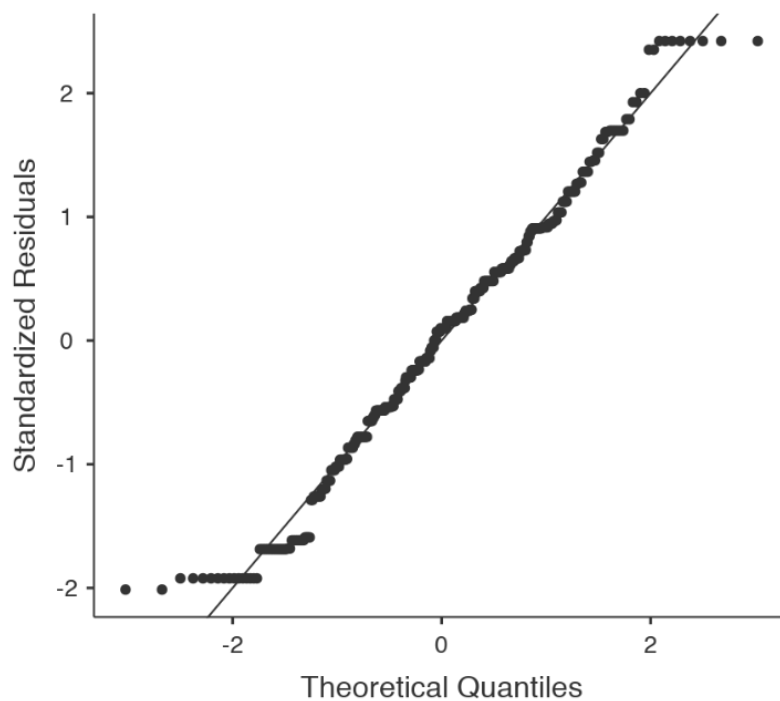
H2 Assumptions: Sustainable Fashion Choice

Homogeneity of Variances (Levene's)

F	df1	df2	p
2.64	5	398	0.023

Normality test (Shapiro-Wilk)

statistic	p
0.980	< .001

Q-Q Plot